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1981 Survey of the Check Collection System

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1981 Survey of the Check Collection System

The Check Collection System Performance Study

Banking's check collection system is the nation's primary payment system for handling transaction volume. This system, while using relatively specialized check handling equipment, is still labor intensive in many of its related sub-operations. Although the interbank check exchange is often called the check collection system, it is, in reality, a loosely organized coordinated system. The procedures for control, crediting, sorting, and security are partially controlled by the Federal Reserve System and the Uniform Commercial Code, and partially based on agreements between banks through correspondent banking relationships or clearing house arrangements.

The latest survey results indicate that each check is processed by an average of 2.4 financial institutions. Differences in competitive levels, as well as other factors, have caused significant differences in the resources, the productive capacity, and the quality of the various check processing operations in the commercial banking industry. Since each bank is responsible for its own check processing operation, there is no central control responsible for total system performance. Yet, each bank would suffer if the check exchange process were to falter, because the entire system is based upon total cooperation and strict adherence to procedure by the participants.

Since overall system performance varies over time due to changes in check volume, the labor market, technological development of systems and equipment, and transportation requirements, up-to-date information is necessary to enable each bank to compare its experiences with its peers.

To maintain the effectiveness of the check collection system, it is essential that defects be remedied before they become serious. Thus, it is through the cooperative efforts of bankers that these data are collected. In the assessment of the impacts of the various trends, the entire industry is provided with a measure of performance for the payment system that carries the heaviest transaction load.

Background

In 1970, Arthur D. Little, Inc. (ADL), under the auspices of the Operations and Technology Task Force of the Monetary and Payments System (MAPS) of the American Bankers Association, collected and published data relative to the performance of banking's check collection system.* The data were used as a basis for

*The Outlook for the Nation's Check Payment System: 1970–1980. Arthur D. Little, Inc. Cambridge, Massachusetts, December, 1970.

evaluating the adequacy of the check collection system from a comparison with similar data in future years. Therefore, ADL recommended a periodic collection of check volume data. The Atlanta Federal Reserve Bank Check Study, a project co-sponsored by the American Bankers Association, Bank Administration Institute, and the Federal Reserve System, represents follow-up research on the nation's check processing volume, as it existed when the data were collected in June, 1979.

Meanwhile, Bank Administration Institute has continued to conduct annual performance measurement surveys of the nation's check collection system. Since 1971, an annual survey has been conducted to collect data that would provide bankers with a measure of industry system fails and a general set of measures for their own check processing operation. The results of each survey also were published by the Institute.

This report, the eleventh in BAI's continuing program of monitoring the performance of banking's check collection system, analyzes the system's performance for 1978 through 1981. Survey data for 1971 through 1977 may be found in previous reports.

Survey Distribution

In October, 1981, 213 commercial banks ($250 million or more in resources) received a BAI Check Collection Performance Measurement Survey questionnaire. All 52 banks that had participated in the original ADL/MAPS study were included. Several banks that had been unable to participate in previous years were included in the survey distribution for 1981, while contributing institutions from previous years were unable to provide data this year. Participating banks collected data for the week of November 16-20, 1981.

Survey Respondents

The total number of survey respondents is shown in Table 1. Of the total number of banks surveyed, 74% responded. The response rate was 63% among the banks that had participated in the ADL survey. The 1981 data represent 441 million checks processed, including 245 million transit checks and 196 million on-us checks. These data were analyzed to determine overall check collection performance related to past measurements and manpower utilization by check processing tasks.

Appendix A consists of the 1981 survey form. Appendix B summarizes many of the comments on check collection and processing operations that were submitted by bankers who participated in the 1981 BAI survey.

1981 Survey Highlights

The highlights of the 1981 survey reveal the following changes from the previous year:

- *The average reject rate* dropped from 1.9% in 1980 to 1.7% in 1981.
- *Transit return items discovered:* The average rate decreased from 1,004.1 items per 100,000 transit items sent in 1980 to 910.1 items in 1981. This 9.4% decline in the average rate follows a significant 16.8% decrease in 1980.
- *Free and lost items discovered:* The average rate discovered decreased 4.1% from 19.6 items per 100,000 incoming items in 1980 to 18.8 items in 1981.

Table 1

Survey Respondents by Geographic Area

Area*	ADL Survey Banks 1978	1979	1980	1981	All Reporting Banks† 1978	1979	1980	1981
Boston	3	1	3	2	10	9	12	10
New York	5	5	4	4	20	17	17	14
Philadelphia	3	1	2	3	18	22	24	18
Pittsburgh	3	2	3	3	6	5	5	5
Washington, D.C.	2	1	1	2	10	7	9	9
Atlanta	2	2	1	2	14	19	21	18
Chicago	6	3	5	3	12	8	11	12
Cleveland	3	3	3	3	12	11	11	13
Detroit	3	1	2	1	6	8	9	9
Minneapolis/St. Paul	0	0	0	1	0	0	0	5
St. Louis	1	2	3	1	9	9	11	10
Dallas	3	2	3	2	6	4	6	7
Houston	2	2	2	2	8	9	8	5
Los Angeles	2	1	1	0	9	9	10	7
San Francisco	2	2	1	2	8	11	11	9
Denver	3	2	2	2	6	5	5	6
Total banks	43	30	36	33	154	153	170	157

The Outlook for the Nation's Check Payment System: 1970-1980, Arthur D. Little, Inc., Cambridge, Massachusetts, December, 1970.

†The non-ADL banks are not necessarily located in the cities surveyed by ADL. For the sake of consistency, however, their data are included in a regional area that has as its center the city studied in this survey. All reporting banks include the data from the ADL banks.

- *Missent, miscoded, and listing error items discovered:* The average rate discovered decreased 10.8% from 18.6 items per 100,000 transit items sent in 1980 to 16.6 items in 1981.
- *Transit holdover:* The average rate continued its steady decline to 1.4% of transit items processed in 1981, from an average rate of 1.9% in 1980. In 1973, the average rate was 9.4%. The average dollar amount of each item held over increased 15.2% to $781.00.
- *The resolution time for outstanding exception items* showed an improvement from 1980, when 77.2% of all exceptions items were more than one month old. In 1981, 70.9% of the items were reported more than one month outstanding, while the dollar amount of outstanding exception items declined slightly. The 1980 survey showed 38.2% of exception item dollars were more than one month old; that figure reached 38.8% for 1981.
- *Overall labor productivity,* measured in checks processed per man-hour, improved in 1981. Average productivity rose to 551.6 items, or 5.1% from 1980, and the median rate increased to 609.8 items per man-hour, 16.7% from 1981.

Significant improvement in the efficiency of most operations in the check collection system was noted for the second consecutive year. With the initiation of

Federal Reserve pricing for check collection services in August, these productivity improvements are timely and must continue to be achieved to stabilize per item costs. The implementation of bulk filing, check safekeeping, and automated reject processing systems is beginning to pay productivity dividends.

However, since the Atlanta Federal Reserve Bank Check Study projects an increasing national check volume until at least 1990, slight yearly gains in productivity will only serve to maintain the status quo. Furthermore, there is still concern with the age distribution of outstanding exception items. Improved performance by the reconcilement division might turn out to be profitable for some banks. As with the other labor intensive operations, automation will significantly boost productivity in the future.

The Measures of System Performance

The primary purpose of the BAI survey is to monitor the industry's check collection system performance. The system's performance can be measured in several ways: cost, speed, or the frequency of error. Although there may be many different ideas concerning what constitutes a system failure or an error, the survey and its succeeding analysis considered the following items to be representative of defects in the system's operation:

- Reject rates.
- Transit returns.
- Free or lost items.
- Missent, miscoded, and listing errors.
- Transit holdover.

Because banks use various definitions and data collection methods, the data presented on system failures have validity only when compared with data collected in the same manner.

Only minor modifications were made in the 1981 survey questionnaire. These changes did not appear to affect the collected data and were comparable to the previous survey data. If the responding banks collected the data in the same manner, the 1981 survey results will identify the changes that have occurred in the past year. All performance analyses for each subject are presented together.

The formulas used in the calculation for each table are given to assist bankers in making their own comparisons. A number of respondents could not answer every question in the survey because of the internal systems in their banks. Consequently, only those banks that furnished valid answers to all questions pertaining to a given formula were considered in the calculations. This accounts for the varying number of respondents in the different tables.

Reader/Sorter Reject Rates

Definition: Percentage of items rejected for any reason by a MICR reader/sorter.

As shown in Table 2, the calculated average reject rate was reduced from 1.9% experienced in 1980 to a 1.7% rate in 1981.

Table 2

Percent of Rejects on Reader/Sorter Equipment by Area

Area	ADL Banks 1978	1979	1980	1981	All Banks 1978	1979	1980	1981
Boston	2.0%	2.3%	2.3%	2.0%	2.1%	2.4%	2.1%	2.0%
New York	2.4	2.4	2.6	2.7	2.3	2.4	2.2	2.7
Philadelphia	2.0	1.1	1.1	1.7	2.2	1.9	1.9	2.3
Pittsburgh	1.6	1.4	1.1	1.6	1.6	1.9	1.8	1.9
Washington, D.C.	1.6	1.0	*	0.8	2.2	1.9	2.1	1.4
Atlanta	2.8	1.9	2.8	1.5	2.3	2.1	1.9	1.6
Chicago	2.0	2.6	1.4	1.7	2.0	2.1	1.7	1.8
Cleveland	1.7	1.7	1.9	1.9	2.1	2.2	1.9	1.8
Detroit	2.0	1.6	2.2	1.9	2.0	2.5	1.8	1.5
Minneapolis/St. Paul	*	*	*	1.3	*	*	*	1.8
St. Louis	1.9	1.4	1.8	1.0	2.1	2.0	2.0	1.7
Dallas	2.8	3.0	2.2	2.4	2.8	2.4	1.8	2.2
Houston	2.4	2.2	2.0	1.3	2.5	2.2	2.1	2.7
Los Angeles	2.1	1.7	2.3	*	1.9	2.1	2.0	1.5
San Francisco	1.5	1.5	2.0	1.5	1.6	2.3	1.6	1.7
Denver	1.8	1.7	1.9	1.6	2.8	1.7	1.7	1.8
Total banks	41	30	33	33	150	152	158	153
Average	2.0%	1.9%	1.9%	1.6%	2.1%	2.1%	1.9%	1.7%

*No respondents.

$$\frac{Q30}{Q7} \times 100$$

An examination of the results for all banks revealed that seven areas experienced a reduction in the reject rate, ranging from 0.1% to 0.7%, while eight had an increased reject rate, ranging from 0.1% to 0.6%. The Washington, D.C. and Los Angeles banks made significant progress, while the New York and Houston banks experienced increased reject rates.

In reviewing Table 3, it is evident that many banks have made important commitments to reducing their prime pass reject rates. The number of banks in the lowest reject rate category, less than 1.0%, increased by 70% from 1980. At the other end of the spectrum, several banks experienced higher rates, although the median improved slightly to 1.7% in 1981.

Of the 116 banks that were able to present a more refined breakdown of first-pass rejects by type (Table 4), on the average:

- 15.1% were due to errors in the transit/routing number.
- 16.3% were due to errors in the account number.
- 35.1% were due to errors in the dollar amount.
- 4.8% were due to errors in the serial number.
- 6.6% were due to errors in the trancode.
- 22.1% were due to other reasons, either unknown or multiple fields.

In summary, an improving average reject rate demonstrates banking industry concern for MICR quality control techniques. Nevertheless, room for improvement

Table 3

Distribution of the Reject Rate

Reject Rate	ADL Banks 1978	1979	1980	1981	All Banks 1978	1979	1980	1981
0% — 1.0%	0	1	3	2	0	6	10	17
1.0% — 1.5%	8	9	5	10	23	26	38	40
1.5% — 2.0%	18	9	8	12	49	47	40	48
2.0% — 2.5%	5	4	13	4	28	33	38	21
2.5% — 3.0%	4	5	4	1	25	21	21	11
3.0% — 3.5%	4	1	0	4	14	7	11	9
3.5% — 4.0%	1	0	0	0	4	7	0	3
Over 4.0%	1	1	0	0	7	5	0	4
Total banks	41	30	33	33	150	152	158	153
Average	2.0	1.9	1.9	1.6	2.1	2.1	1.9	1.7
Median	1.9	1.8	2.0	1.7	2.0	2.0	1.8	1.7

$$\frac{Q30}{Q7} \times 100$$

does exist. For instance, as the installations continue of automated reject processing equipment that re-encodes the MICR line, intermediate banks in a check's processing cycle will experience reduced reject rates if full field repair has been accomplished. While technology is available to effect greater reductions in reject rates, cooperation among banks is required. Similarly, banks must work to decrease the percentage of rejects caused by errors in the dollar amount field. A monitoring program should be initiated with the banks own encoding machines, including those located in lockbox, and be extended to customers who forward large volumes of pre-encoded work. Check processing departments equipped with multipocket proof machines that have on-line reject reentry capabilities must be particularly alert to ensure that they are not merely passing rejects on to the next processing institution.

A comparison of consolidated figures by major geographic sections of the nation is shown below:

Consolidated Reject Rates

Section	1978	1979	1980	1981
6 Eastern areas	2.2%	2.1%	2.0%	2.0%
7 Midwestern areas	2.2%	2.2%	1.9%	1.9%
3 Western areas	1.9%	2.0%	1.8%	1.7%

Table 4

Percent of First-Pass Rejects by Type and by Area

Area	Transit Number*				Account Number†				Dollar Amount‡				Serial Number§				Trancode ‖				Other Reasons#			
	1978	1979	1980	1981	1978	1979	1980	1981	1978	1979	1980	1981	1978**	1979**	1980**	1981	1978**	1979**	1980**	1981	1978	1979	1980	1981
Boston	27%	27%	21%	14%	14%	19%	20%	20%	41%	44%	45%	40%				4%				4%	18%	10%	14%	17%
New York	19	19	19	14	18	19	15	15	46	40	39	30				3				7	17	21	27	31
Philadelphia	14	14	14	11	10	18	22	16	53	42	35	34				5				12	23	26	29	22
Pittsburgh	15	20	17	11	19	20	16	20	44	38	37	28				5				7	22	22	29	29
Washington, D.C.	23	29	27	18	14	19	15	21	46	40	34	23				3				12	17	13	24	23
Atlanta	21	20	16	19	23	21	17	20	42	35	40	33				6				6	14	24	27	16
Chicago	21	23	21	23	12	12	14	13	49	44	40	41				4				3	18	21	26	16
Cleveland	18	18	18	18	22	19	21	18	37	39	40	39				5				9	23	24	20	11
Detroit	19	18	18	18	22	22	17	20	26	35	45	35				3				3	33	25	21	20
Minneapolis/ St. Paul	*	*	*	17	*	*	*	13	*	*	*	31				2				10	*	*	*	27
St. Louis	18	16	18	16	19	9	10	10	42	47	47	41				4				10	30	28	25	18
Dallas	49	25	16	27	1	25	13	14	43	25	35	49				0				3	7	25	36	7
Houston	19	19	27	12	14	16	12	11	48	59	45	41				8				9	19	7	15	19
Los Angeles	16	19	16	26	14	23	23	30	33	36	43	28				4				6	37	21	18	6
San Francisco	22	18	13	12	19	19	15	19	34	36	39	40				3				7	25	27	33	18
Denver	13	17	22	21	13	16	16	26	26	45	45	26				5				9	48	21	17	13
Total banks	86	106	127	116																				
Average	19.5%	19.2%	18.6%	15.1%	16.1%	18.5%	15.7%	16.3%	40.7%	40.5%	41.5%	35.1%				4.8%				6.6%	23.7%	21.9%	24.2%	22.1%
Median	8.8%	18.1%	17.1%	15.2%	1.5%	19.3%	17.3%	17.8%	19.8%	40.2%	39.5%	33.3%				3.1%				5.2%	2.0%	20.6%	21.5%	13.0%

*No respondents;

**No comparable data collected.

$\frac{*Q24}{Q30} \times 100$; $\frac{\dagger Q25}{Q30} \times 100$; $\frac{\ddagger Q26}{Q30} \times 100$; $\frac{\S Q27}{Q30} \times 100$; $\frac{\| Q28}{Q30} \times 100$; $\frac{\# Q29}{Q30} \times 100$

Transit Returns

Definition: Items returned today for any reason that were originally sent out as transit items from this bank.

The average rate of transit return items discovered decreased again in 1981 from 1,004.1 items per 100,000 transit items sent in 1980 to 910.1 items (Table 5), while the median rate was also reduced to 824.1 items per 100,000 transit items sent—an 11.5% decrease. In the last two years, the average rate dropped 24.6%.

In 1976, 64% of the responding banks experienced an average return rate under 1,000 items per 100,000 transit items sent. By 1981, nearly 71% of the responding banks reported a rate under 1,000 items (Table 6). Although the trend is improving, return items continue to pose a significant problem to the check processing industry because automated systems have not yet been perfected to deal with a labor intensive operation. With the recent approval of an endorsement standard by the American National Standards Institute, it is hoped that some progress toward more productive processing of return items will be made in 1982.

Table 7 shows the distribution of banks according to their return item rate and the average dollar value of each item returned. The average value for a return item decreased 13.3% from $813 in 1980 to $705 in 1981, but the median value increased to $528 in the 1981 survey.

Table 5

Transit Returns by Area
(Rate per 100,000 of Transit Items Sent)

Area	ADL Banks 1978	1979	1980	1981	All Banks 1978	1979	1980	1981
Boston	601.6	832.6	712.7	776.5	593.4	911.3	787.2	843.2
New York	915.9	1,601.9	901.0	807.3	840.3	1,310.4	904.3	908.6
Philadelphia	797.9	942.9	1,046.2	692.9	772.4	813.6	800.4	667.1
Pittsburgh	904.9	845.5	846.0	848.9	824.6	598.9	831.8	725.6
Washington, D.C.	1,735.6	974.2	1,228.6	927.0	1,041.4	1,070.3	1,138.4	865.7
Atlanta	832.8	1,066.1	726.0	927.9	914.6	1,298.9	1,046.6	1,028.2
Chicago	815.2	1,032.7	960.9	690.7	805.1	1,005.0	929.4	732.2
Cleveland	1,350.7	1,352.1	1,511.3	1,581.1	1,023.8	1,039.5	1,106.5	984.3
Detroit	945.1	1,453.6	1,417.3	1,339.7	883.1	1,320.6	966.9	1,067.5
Minneapolis/St. Paul	*	*	*	3,299.3	*	*	*	1,169.7
St. Louis	1,263.4	1,276.0	1,260.9	895.9	1,362.2	1,428.5	1,309.0	1,014.8
Dallas	994.0	1,311.7	1,000.2	834.2	952.7	1,530.1	867.7	1,293.5
Houston	949.8	1,173.4	1,311.6	775.4	1,152.0	1,308.2	1,474.5	1,651.6
Los Angeles	1,079.8	1,124.4	2,092.9	*	958.1	1,085.4	1,134.9	1,514.1
San Francisco	1,822.0	2,046.8	1,547.7	1,183.3	1,548.8	1,712.4	1,088.6	1,095.1
Denver	1,581.7	1,923.2	899.2	1,450.2	1,443.1	2,166.1	1,085.4	1,526.8
Total banks	43	30	36	33	147	146	165	149
Average	1,118.0	1,325.9	1,046.0	875.8	1,023.1	1,207.1	1,004.1	910.1

*No respondents.

$$\frac{Q18}{Q10} \times 100{,}000$$

Table 6
Distribution of the Transit Return Rate

Transit Return Rate	ADL Banks 1978	1979	1980	1981	All Banks 1978	1979	1980	1981
0 — 200	0	0	0	0	1	2	1	1
200 — 400	1	0	1	0	9	2	6	4
400 — 600	3	0	0	4	19	11	7	18
600 — 800	10	3	11	9	43	25	44	45
800 — 1,000	10	9	5	11	29	34	37	37
1,000 — 1,200	5	3	8	2	12	14	28	10
1,200 — 1,400	6	8	2	2	9	21	19	11
1,400 — 1,600	0	2	5	2	5	9	8	7
1,600 — 1,800	3	0	2	1	10	4	7	5
1,800 — 2,000	1	1	0	0	3	7	4	3
Over 2,000	4	4	2	2	7	17	4	8
Total banks	43	30	36	33	147	146	165	149
Average	1,118.0	1,325.9	1,046.0	875.8	1,023.1	1,207.1	1,004.1	910.1
Median	957.6	1,190.3	1,021.9	840.4	791.1	972.0	931.1	824.1

$$\frac{Q18}{Q10} \times 100{,}000$$

Table 7
Transit Return Dollar Value by Rate of Transit Returns

ADL Banks

Transit Returns per 100,000 Items Sent*	Number of Banks 1978	Number of Banks 1979	Number of Banks 1980	Number of Banks 1981	Average Dollar Value† 1978	Average Dollar Value† 1979	Average Dollar Value† 1980	Average Dollar Value† 1981
0 — 500	2	0	1	1	$1,240	$ 0	$ 255	$ 686
500 — 1,000	22	12	16	23	0	619	1,259	785
1,000 — 1,500	11	12	12	5	967	1,071	610	539
1,500 — 2,000	4	2	5	2	275	493	1,353	1,678
Over 2,000	4	4	2	2	812	2,166	520	762
Total banks	43	30	36	33				
Average					$ 771	$ 948	$1,043	$ 719
Median					$ 600	$ 620	$ 758	$ 624

All Banks

Transit Returns per 100,000 Items Sent*	Number of Banks 1978	Number of Banks 1979	Number of Banks 1980	Number of Banks 1981	Average Dollar Value† 1978	Average Dollar Value† 1979	Average Dollar Value† 1980	Average Dollar Value† 1981
0 — 500	16	8	8	12	$ 830	$ 679	$ 714	$ 737
500 — 1,000	85	66	87	93	731	555	705	614
1,000 — 1,500	22	40	50	25	885	1,102	583	717
1,500 — 2,000	17	15	16	11	310	365	1,023	801
Over 2,000	7	17	4	8	702	858	513	866
Total banks	147	146	165	149				
Average					$ 659	$ 800	$ 813	$ 705
Median					$ 417	$ 409	$ 496	$ 528

$^{*}\frac{Q18}{Q10} \times 100{,}000; \quad ^{\dagger}\frac{Q19}{Q18}$

Free and Lost Items

Definition: *Free items are items received but not listed on the incoming cash letter. Lost items are items listed on the incoming cash letter but not received.*

The combined average rate of free and lost items discovered decreased from 19.6 items per 100,000 incoming items in 1980 to 18.8 items in 1981, while the median rate increased to 15.0 items per 100,000 incoming items in 1981 (Table 8). Tables 9 and 10 show, respectively, the rate of free items discovered and of lost items discovered. As in previous surveys, the average lost item rate (11.0) was greater than the average free item rate (7.8). A review of Tables 9 and 10, indicates that the Denver area banks have been particularly effective in controlling the quality of cash letter preparation during the last two years. The distribution of free and lost items is shown in Table 11.

Table 8

Free and Lost Items Discovered by Area
(Rate per 100,000 Incoming Items)

	ADL Banks				All Banks			
Area	**1978**	**1979**	**1980**	**1981**	**1978**	**1979**	**1980**	**1981**
Boston	21.7	14.8	11.2	16.9	13.4	11.9	10.2	11.5
New York	28.1	25.6	19.5	16.9	24.8	28.7	14.6	20.3
Philadelphia	12.9	12.7	7.3	7.2	13.7	8.2	13.3	29.8
Pittsburgh	8.1	15.0	10.1	10.3	8.3	9.3	15.7	12.1
Washington, D.C.	19.4	24.3	21.1	2.8	22.6	18.5	26.5	23.1
Atlanta	35.0	30.3	93.3	14.8	21.3	20.6	26.2	16.1
Chicago	13.2	16.1	14.0	16.9	13.4	12.2	14.7	16.5
Cleveland	30.5	25.2	39.5	53.3	23.2	25.3	23.1	33.0
Detroit	37.7	40.6	58.2	26.3	39.2	17.3	31.9	22.4
Minneapolis/St. Paul	*	*	*	14.4	*	*	*	36.9
St. Louis	17.8	53.0	33.0	43.2	26.2	25.9	31.9	25.6
Dallas	40.7	37.6	18.8	10.5	43.5	52.6	16.9	15.2
Houston	20.0	14.3	12.8	21.4	24.6	21.0	24.3	24.5
Los Angeles	13.3	4.9	20.8	*	11.6	48.4	18.7	37.2
San Francisco	19.4	42.1	29.9	24.1	23.7	26.3	19.6	15.5
Denver	14.0	24.4	4.6	3.5	16.8	18.1	10.6	10.5
Total banks	43	29	36	31	152	148	165	143
Average	21.7	25.2	21.4	17.1	21.3	21.7	19.6	18.8
Median	15.1	19.5	17.8	13.9	12.5	13.9	13.4	15.0

*No respondents.

$$\frac{Q38 + Q40}{Q1 + Q2} \times 100{,}000$$

Table 9

Free Items Discovered by Area
(Rate per 100,000 Incoming Items)

Area	ADL Banks 1978	1979	1980	1981	All Banks 1978	1979	1980	1981
Boston	12.3	5.5	4.3	6.3	6.8	3.3	4.1	3.6
New York	11.1	11.1	8.6	5.3	10.1	6.4	7.2	7.5
Philadelphia	6.0	3.7	3.0	2.6	6.0	3.5	4.8	4.7
Pittsburgh	3.9	3.8	4.1	4.2	3.3	3.4	3.4	3.0
Washington, D.C.	6.8	9.3	7.8	1.1	9.6	7.5	8.2	13.0
Atlanta	13.3	10.7	37.3	6.5	7.8	7.8	10.9	6.9
Chicago	4.1	4.3	4.7	7.0	4.5	4.0	6.3	6.4
Cleveland	13.7	9.7	16.1	25.0	9.2	7.1	8.1	9.3
Detroit	13.0	21.1	7.9	8.7	13.9	16.3	6.1	6.0
Minneapolis/St. Paul	*	*	*	7.5	*	*	*	14.2
St. Louis	7.8	36.5	18.3	20.8	10.4	12.4	15.4	10.6
Dallas	18.9	14.7	7.9	5.3	23.0	23.5	6.6	8.8
Houston	10.6	5.2	6.9	12.1	12.3	6.4	8.8	15.1
Los Angeles	3.8	1.2	6.9	*	3.0	40.4	4.7	17.7
San Francisco	6.8	15.8	6.9	9.0	8.9	7.5	5.2	4.4
Denver	4.9	13.7	1.6	2.6	5.9	10.1	4.8	5.0
Total banks	43	29	36	31	152	148	165	143
Average	8.7	10.4	8.1	7.7	8.7	8.9	7.7	7.8
Median	5.2	6.6	6.0	5.5	4.5	4.1	4.6	4.3

*No respondents.

$$\frac{Q38}{Q1 + Q2} \times 100{,}000$$

Table 10

Lost Items Discovered by Area
(Rate per 100,000 Incoming Items)

Area	ADL Banks 1978	1979	1980	1981	All Banks 1978	1979	1980	1981
Boston	9.4	9.3	6.9	10.6	6.6	8.5	6.0	7.9
New York	17.0	14.5	11.0	11.6	14.7	22.4	7.4	12.8
Philadelphia	6.9	9.0	4.3	4.6	7.7	4.7	8.5	25.1
Pittsburgh	4.2	11.2	6.0	6.1	5.0	5.9	12.3	9.0
Washington, D.C.	12.7	15.1	13.4	1.7	13.0	11.0	18.3	10.1
Atlanta	21.6	19.7	56.0	8.2	13.5	12.8	15.3	9.2
Chicago	9.0	11.9	9.3	9.8	8.9	8.2	8.4	10.1
Cleveland	16.8	15.5	23.4	28.4	14.0	18.2	15.0	23.7
Detroit	24.7	19.6	50.4	17.6	25.3	11.9	25.7	16.4
Minneapolis/St. Paul	*	*	*	6.9	*	*	*	22.7
St. Louis	10.0	16.4	14.8	22.3	15.7	13.5	16.5	15.0
Dallas	21.7	22.9	10.9	5.2	20.5	29.1	10.3	6.4
Houston	9.4	9.2	5.9	9.3	12.3	14.6	15.5	9.4
Los Angeles	9.5	3.7	13.9	*	8.6	8.0	14.0	19.5
San Francisco	12.7	26.2	23.0	15.0	14.8	18.8	14.3	11.0
Denver	9.2	10.7	3.0	1.0	10.9	7.9	5.7	5.5
Total banks	43	29	36	31	152	148	165	143
Average	12.9	14.7	13.3	9.5	12.6	12.9	11.9	11.0
Median	9.5	12.5	10.1	6.9	7.9	8.6	8.1	9.0

*No respondents.

$$\frac{Q40}{Q1 + Q2} \times 100{,}000$$

Table 11

Distribution of the Free and Lost Items Rate

Rate	ADL Banks 1978	1979	1980	1981	All Banks 1978	1979	1980	1981
0 — 5	3	1	5	6	18	21	29	22
5 — 10	11	5	7	7	41	37	40	31
10 — 15	9	6	4	5	27	23	20	19
15 — 20	6	2	5	3	17	14	13	13
20 — 25	2	4	4	2	7	13	14	16
25 — 30	5	1	2	2	10	7	8	12
30 — 35	2	0	1	2	7	6	13	6
35 — 40	1	1	2	1	2	7	8	2
40 — 45	0	3	3	1	4	6	6	7
45 — 50	1	1	0	0	1	4	3	2
50 — 100	5	4	3	2	13	8	11	10
Over 100	0	0	0	0	5	2	0	3
Total banks	43	29	36	31	152	148	165	143
Average	21.7	25.2	21.4	17.1	21.3	21.7	19.6	18.8
Median	15.1	19.5	17.8	13.9	12.5	13.9	13.4	15.0

$$\frac{Q38 + Q40}{Q1 + Q2} \times 100{,}000$$

Missent, Miscoded, and Listing Error Items

Definition: *Items that are discovered to have been missent for any reason, or that have been miscoded by this bank or other banks, or an error when an item was listed for one amount but drawn for a different amount.*

In 1981, the average rate of missent, miscoded, and listing error items discovered out of each 100,000 transit items sent decreased 10.8% from 18.6 items in 1980 to 16.6 items in 1981, while the median rate dropped 12.8% to 13.0 items (Table 12).

The average rate of missent items continued to improve by decreasing to 6.5 items (Table 13), while the average rate of miscoded items remained constant at 6.4 items in the 1981 survey (Table 14). The average number of listing errors discovered also improved slightly to 3.8 items per 100,000 transit items sent in 1981 (Table 15). With a shifting of traditional sending patterns due to Federal Reserve pricing, the evidence suggests that transit departments were able to adapt quickly to these changes. The distribution of these error rates is shown in Table 16.

Table 12

Missent, Miscoded, and Listing Error Items Discovered by Area (Rate per 100,000 Transit Items Sent)

Area	ADL Banks 1978	1979	1980	1981	All Banks 1978	1979	1980	1981
Boston	8.3	4.0	38.5	8.3	9.1	9.5	24.0	29.3
New York	57.6	40.6	25.4	23.3	40.4	47.2	23.4	24.3
Philadelphia	17.2	9.6	12.8	10.7	18.7	18.4	29.6	16.2
Pittsburgh	5.1	5.1	14.7	13.1	6.1	9.5	15.4	13.4
Washington, D.C.	4.1	7.7	2.8	18.5	12.1	17.7	16.1	14.4
Atlanta	45.7	46.6	50.8	12.6	21.2	26.1	20.9	16.4
Chicago	17.1	17.5	14.7	20.9	15.9	12.9	10.0	15.8
Cleveland	20.0	17.3	27.4	36.9	22.4	15.7	17.8	21.5
Detroit	23.1	4.6	13.5	12.7	21.8	17.4	20.0	17.4
Minneapolis/St. Paul	*	*	*	43.6	*	*	*	33.9
St. Louis	15.2	34.7	20.4	26.2	10.0	12.4	14.1	13.8
Dallas	12.3	26.4	21.6	7.1	13.0	53.7	24.1	9.6
Houston	18.4	20.6	10.0	8.9	17.9	20.3	32.8	32.3
Los Angeles	27.0	29.6	26.5	*	33.5	25.2	31.0	25.8
San Francisco	17.7	15.2	26.4	17.4	21.5	30.1	22.6	23.3
Denver	9.6	8.4	12.1	5.7	8.0	14.4	12.9	5.7
Total banks	42	29	36	32	150	149	168	143
Average	22.8	22.2	20.1	14.2	20.5	23.0	18.6	16.6
Median	14.1	17.2	17.2	12.6	13.6	13.4	14.9	13.0

*No respondents.

$$\frac{Q32 + Q34 + Q36}{Q10} \times 100{,}000$$

Table 13

Missent Items Discovered by Area (Rate per 100,000 Transit Items Sent)

Area	ADL Banks 1978	1979	1980	1981	All Banks 1978	1979	1980	1981
Boston	0.3	0.5	32.4	4.4	1.8	2.4	15.2	20.2
New York	21.2	20.8	14.7	11.5	14.9	34.0	14.6	11.6
Philadelphia	11.1	*	6.1	3.9	8.5	10.3	19.4	3.7
Pittsburgh	0.5	0.5	4.0	5.9	0.6	2.2	2.4	4.0
Washington, D.C.	1.4	3.0	0.5	5.2	4.8	9.5	5.1	4.6
Atlanta	6.6	21.8	12.8	0.1	5.3	9.1	5.1	3.8
Chicago	5.2	6.0	4.4	6.2	5.0	5.3	2.8	8.0
Cleveland	8.7	0.1	2.2	15.6	12.4	6.8	4.4	10.4
Detroit	14.9	*	3.2	*	13.9	12.6	10.4	9.6
Minneapolis/St. Paul	*	*	*	*	*	*	*	7.2
St. Louis	1.5	8.4	5.2	5.4	1.9	2.8	3.1	2.7
Dallas	0.7	5.3	9.1	*	3.6	40.3	16.1	4.0
Houston	6.6	8.9	1.7	3.5	8.3	15.1	25.5	24.2
Los Angeles	21.0	20.8	10.8	*	27.8	20.8	20.1	15.6
San Francisco	7.6	3.5	9.8	5.9	9.8	20.9	12.2	13.7
Denver	2.8	1.4	0.6	1.5	3.5	6.6	4.8	2.2
Total banks	42	29	36	32	150	149	168	143
Average	9.0	8.2	7.9	4.8	8.8	13.5	7.9	6.5
Median	1.5	2.3	3.8	2.7	3.1	3.6	4.2	3.9

*No respondents.

$$\frac{Q32}{Q10} \times 100{,}000$$

Table 14

Miscoded Items Discovered by Area (Rate per 100,000 Transit Items Sent)

Area	ADL Banks 1978	1979	1980	1981	All Banks 1978	1979	1980	1981
Boston	5.3	1.3	5.1	2.9	4.7	6.0	6.1	6.9
New York	33.2	12.0	8.4	10.3	22.5	9.3	4.7	9.4
Philadelphia	3.8	2.7	4.9	5.2	6.3	5.2	5.8	8.3
Pittsburgh	3.9	4.1	6.9	5.6	4.8	5.8	7.7	7.3
Washington, D.C.	1.6	4.2	1.7	9.7	4.3	5.4	6.6	7.2
Atlanta	28.6	16.2	31.7	7.1	10.0	8.4	8.6	7.0
Chicago	8.4	8.3	6.4	8.0	7.7	4.4	4.6	4.3
Cleveland	3.4	9.0	10.7	12.8	4.7	4.8	6.6	5.8
Detroit	4.3	0.3	3.6	4.8	4.2	2.6	3.5	3.0
Minneapolis/St. Paul	*	*	*	7.4	*	*	*	8.2
St. Louis	0.3	11.7	5.1	4.3	3.4	5.9	4.0	3.6
Dallas	4.7	5.4	4.8	6.4	4.1	4.0	3.4	3.0
Houston	9.7	2.5	1.5	2.8	7.5	1.9	3.6	4.0
Los Angeles	4.7	6.9	11.7	*	4.1	3.0	7.4	6.9
San Francisco	4.8	7.1	10.6	9.1	5.6	11.8	6.7	6.6
Denver	4.1	3.8	5.9	3.8	3.4	3.2	4.2	3.1
Total banks	43	29	36	32	151	150	169	146
Average	9.7	7.5	7.5	6.5	7.7	6.0	6.4	6.4
Median	4.7	5.5	5.8	4.5	3.8	4.1	4.7	4.3

*No respondents.

$$\frac{Q34}{Q10} \times 100{,}000$$

Table 15

Listing Error Items Discovered by Area (Rate per 100,000 Transit Items Sent)

Area	ADL Banks 1978	1979	1980	1981	All Banks 1978	1979	1980	1981
Boston	2.7	2.2	1.0	0.9	2.6	1.1	2.7	2.2
New York	3.2	7.8	2.3	1.5	2.9	3.9	4.0	3.4
Philadelphia	2.3	7.0	1.9	1.6	3.8	2.9	4.4	4.2
Pittsburgh	0.8	0.5	3.8	1.6	0.8	1.5	5.2	2.2
Washington, D.C.	1.0	0.4	0.7	3.6	2.9	2.7	4.4	2.7
Atlanta	10.4	8.6	6.3	5.4	5.8	8.6	6.8	5.7
Chicago	3.4	3.2	3.9	6.6	3.3	3.2	2.6	3.5
Cleveland	7.9	8.2	14.5	8.5	5.3	4.2	6.8	5.4
Detroit	3.8	4.3	6.7	7.8	3.6	2.2	6.1	4.7
Minneapolis/St. Paul	*	*	*	36.2	*	*	*	18.5
St. Louis	13.4	14.7	10.2	16.6	4.7	3.8	7.0	7.5
Dallas	5.7	15.6	7.8	0.7	4.6	9.4	4.7	2.7
Houston	2.1	9.2	6.7	2.6	2.1	3.3	3.7	4.1
Los Angeles	1.2	2.0	4.0	*	1.6	1.3	3.6	3.1
San Francisco	5.3	4.6	5.9	2.4	6.1	3.1	3.7	2.7
Denver	2.8	3.2	5.6	0.4	2.1	4.5	4.0	0.4
Total banks	43	29	36	32	151	150	169	144
Average	4.0	6.4	4.7	3.0	3.9	3.9	4.3	3.8
Median	2.5	2.8	4.5	1.6	2.2	2.0	2.4	2.1

*No respondents.

$$\frac{Q36}{Q10} \times 100{,}000$$

Table 16

Distribution of Missent, Miscoded, and Listing Error Items Rate

Rate	ADL Banks				All Banks			
	1978	1979	1980	1981	1978	1979	1980	1981
0 — 5	8	3	2	4	22	26	20	16
5 — 10	8	7	6	8	32	35	38	32
10 — 15	5	2	7	7	31	21	26	31
15 — 20	7	5	6	2	23	17	23	18
20 — 25	4	3	4	4	12	15	17	13
25 — 30	2	3	6	3	4	8	15	8
30 — 35	1	1	1	1	3	3	6	7
35 — 40	1	2	1	0	3	5	4	5
40 — 45	0	1	0	1	2	2	4	3
45 — 50	1	0	0	1	1	2	0	3
50 — 100	3	1	3	1	14	11	13	6
100 — 200	1	1	0	0	1	3	1	1
Over 200	1	0	0	0	2	1	1	0
Total banks	42	29	36	32	150	149	168	143
Average	22.8	22.2	20.1	14.2	20.5	23.0	18.6	16.6
Median	14.6	17.2	17.2	12.6	13.6	13.4	14.9	13.0

$$\frac{Q32 + Q34 + Q36}{Q10} \times 100{,}000$$

Exception Items Plus Return Items

Definition: Transit items that require special reconcilement with other banks, such as missent, miscoded, listing errors, returns, and free and lost items.

The average rate of exception items and transit return items discovered in 1981 was 959.4 items per 100,000 transit items sent. This represents a decrease of 9.7% over 1980 when the rate was 1,062.2 (Table 17). Of the 143 responding banks, 64% reported rates under 1,000 items discovered, 30% reported rates ranging from 1,000 to 2,000 items, and 6% reported rates over 2,000 items discovered (Table 18). Table 18 also shows that the median rate decreased 10.7% from 969.0 items in 1980 to 865.0 items in 1981.

Table 19 shows the percent of exceptions, returns, and reject items to the total volume of items processed. The average rate of 2.4% of all items requiring special handling remained unchanged from the previous year, although the median value decreased slightly to 2.5%.

Table 20 shows the number of banks distributed according to their rate of exceptions, returns, and rejects. In 1979, only 15.3% of all reporting banks had an overall rate less than 2%; however, this figure improved to 38.6% in 1981.

Table 17

Exception and Return Items Discovered by Area (Rate per 100,000 Transit Items Processed)

Area	ADL Banks 1978	1979	1980	1981	All Banks 1978	1979	1980	1981
Boston	631.9	850.8	761.6	798.8	616.8	934.3	884.5	883.1
New York	1,005.2	1,681.5	950.4	851.3	907.3	1,383.5	902.4	939.9
Philadelphia	826.6	966.3	1,066.5	715.6	803.9	856.0	843.6	718.6
Pittsburgh	920.7	866.2	871.9	873.4	841.7	619.7	863.1	753.1
Washington, D.C.	1,755.5	997.8	1,241.0	947.8	1,075.4	1,104.5	1,172.5	904.9
Atlanta	912.3	1,141.8	816.4	955.8	956.8	1,351.1	1,240.4	1,056.0
Chicago	848.3	1,071.9	997.6	730.1	836.8	1,032.1	957.0	766.1
Cleveland	1,403.9	1,397.0	1,591.2	1,910.3	1,069.1	1,082.5	1,151.6	1,095.9
Detroit	1,010.6	1,505.7	1,494.1	1,384.9	945.0	1,371.5	895.5	1,185.8
Minneapolis/St. Paul	*	*	*	3,472.9	*	*	*	1,422.3
St. Louis	1,293.5	1,331.2	1,312.8	957.9	1,389.5	1,465.7	1,353.0	1,053.5
Dallas	1,044.2	1,376.8	1,041.9	852.6	1,006.1	1,650.6	910.3	1,288.2
Houston	989.3	1,212.7	1,345.8	806.1	1,193.7	1,346.5	1,533.7	1,250.8
Los Angeles	1,119.2	1,157.3	2,144.6	*	1,004.5	1,160.8	1,194.3	1,767.3
San Francisco	1,858.5	2,110.9	1,612.5	1,225.8	1,593.5	1,932.9	1,276.3	1,158.6
Denver	1,608.7	1,960.1	918.7	1,461.1	1,471.6	2,200.4	1,111.8	1,542.6
Total banks	43	30	36	32	147	144	167	143
Average	1,632.2	1,376.3	1,089.3	915.5	1,065.1	1,266.2	1,062.2	959.4

*No respondents.

$$\frac{Q18 + Q42}{Q10} \times 100{,}000$$

Table 18

Distribution of the Exception and Return Items Rate

Rate	ADL Banks 1978	1979	1980	1981	All Banks 1978	1979	1980	1981
0 — 250	1	0	1	0	3	2	4	2
250 — 500	1	0	0	1	12	5	4	6
500 — 750	7	0	3	7	30	17	23	32
750 — 1,000	11	12	11	14	49	45	55	51
1,000 — 1,250	8	3	11	4	18	18	44	22
1,250 — 1,500	7	8	1	2	11	21	12	11
1,500 — 1,750	3	2	6	2	11	9	11	7
1,750 — 2,000	1	1	1	0	5	10	6	3
2,000 — 2,500	2	2	2	0	5	9	5	4
Over 2,500	2	2	0	2	3	8	3	5
Total banks	43	30	36	32	147	144	167	143
Average	1,163.2	1,376.3	1,089.3	915.5	1,065.1	1,266.2	1,062.2	959.4
Median	1,009.9	1,248.6	1,059.7	868.6	887.2	1,044.5	969.0	865.0

$$\frac{Q18 + Q42}{Q10} \times 100{,}000$$

Table 19
Percent of Exceptions, Returns, and Rejects to the Number of Items Processed

Area	ADL Banks 1978	1979	1980	1981	All Banks 1978	1979	1980	1981
Boston	2.4%	2.9%	2.6%	2.3%	2.5%	2.5%	2.6%	2.4%
New York	2.8	4.6	3.0	2.7	2.7	3.4	2.6	2.7
Philadelphia	2.5	1.5	1.8	2.2	2.6	2.3	2.3	2.8
Pittsburgh	2.1	1.8	1.5	1.7	2.0	1.9	1.8	1.8
Washington, D.C.	2.6	1.6	*	1.2	2.7	2.6	2.6	1.8
Atlanta	3.4	2.6	2.1	2.2	2.8	3.0	2.6	2.2
Chicago	2.6	3.4	2.4	2.3	2.6	2.8	2.5	2.3
Cleveland	2.4	2.4	2.9	3.2	2.6	2.9	2.7	2.2
Detroit	2.5	2.1	2.8	2.3	2.4	3.2	2.7	2.9
Minneapolis/St. Paul	*	*	*	8.7	*	*	*	3.8
St. Louis	2.8	2.6	2.7	1.8	3.1	3.0	2.8	2.4
Dallas	3.7	4.1	3.1	3.3	3.6	3.3	2.4	3.1
Houston	3.3	3.5	3.7	1.9	3.5	3.0	3.8	4.4
Los Angeles	2.7	2.2	2.0	*	2.4	2.8	2.1	2.2
San Francisco	2.3	2.4	2.6	2.1	2.2	3.6	2.2	2.5
Denver	2.6	3.3	2.9	2.9	3.4	3.2	2.4	2.3
Total banks	41	30	33	32	142	144	155	140
Average	2.6%	3.1%	2.5%	2.2%	2.6%	2.9%	2.4%	2.4%
Median	2.6%	2.7%	2.6%	2.3%	2.6%	2.7%	2.6%	2.5%

*No respondents.

$$\frac{Q30 + Q18 + Q42}{Q16} \times 100$$

Table 20
Distribution of Exceptions, Returns, and Reject Rate

Rate	ADL Banks 1978	1979	1980	1981	All Banks 1978	1979	1980	1981
0%—1.5%	0	0	2	4	6	6	15	20
1.5%—2.0%	8	4	5	4	22	16	24	34
2.0%—2.5%	8	9	6	14	36	37	37	34
2.5%—3.0%	14	6	12	5	33	34	42	28
3.0%—3.5%	4	4	5	2	18	20	21	9
3.5%—4.0%	5	2	1	0	11	12	8	5
4.0%—4.5%	1	1	2	1	9	8	4	2
4.5%—5.0%	0	2	0	0	3	5	1	1
Over 5.0%	1	2	0	2	4	6	3	7
Total banks	41	30	33	32	142	144	155	140
Average	2.6	3.1	2.5	2.2	2.6	2.9	2.4	2.4
Median	2.6	2.7	2.6	2.3	2.6	2.7	2.6	2.5

$$\frac{Q30 + Q18 + Q42}{Q16} \times 100$$

A Dollar Analysis of Return and Exception Items

During the survey week, 149 banks collected data on the dollar value of the return and exception items processed. The data are shown by geographic area in Table 21. The 1981 average for a bank's weekly dollar volume of return items processed decreased 10.3% from 1980. Although the 1981 average for a bank's weekly dollar volume of exception items discovered rose sharply, that increase was effectively offset by the resolved dollar value.

Outstanding Exception Items

Table 22 compares the outstanding exception dollars and the number of items on an aged basis for 124 reporting banks. The resolution time for outstanding exception items improved from 1980, when 77.2% of all exception items were more than one month old. In 1981, 70.9% of the items were reported more than one month outstanding, while the dollar amount of outstanding exception items declined slightly. The 1980 survey showed 38.2% of exception item dollars were more than one month old; that figure reached 38.8% for 1981.

With the implementation of the Federal Reserve System's pricing for check collection services promoting different and more innovative interbank relationships, it is important to recognize the trends and work to streamline the internal reconcilement function, while investigating more efficient methods of transaction control with other commercial banks and Federal Reserve banks. During the year, at least two software packages were developed by vendors to improve the productivity of the reconcilement operation.

Table 23 compares the aged distribution of outstanding exception items for the average bank according to the method used to microfilm items: after reader/sorter processing, before reader/sorter processing, or during reader/sorter processing. Because of the various resource sizes of the reporting banks, the amount and the number of items outstanding should not be compared. The key comparison is the relative percentage. The data indicate that banks that microfilm before reader/sorter processing continue to resolve their outstanding exception dollars more rapidly than banks that use other methods. Most large correspondent banks microfilm during reader/sorter processing, and these banks have improved their performance. Through these efforts, the reconcilement problems of smaller banks will also be resolved, as inquiries receive more timely response.

A Comparison of Balancing Policy and Experience

Table 24 compares how bankers responded since 1978 to questions regarding their balancing procedures, their evaluation of the growth of the exception item

Table 21

Return and Exception Item Dollar Analysis by Area (During the Survey Week)

Area	Return Items		Exception Items Discovered		Exception Items Resolved	
	Total $ Discovered*	Average $ Value/ Item†	Total $ ‡	Average $ Value/ Item §	Total $ ‖	Average $ Value/ Item #
Boston	$ 91,935,360	$ 674	$ 37,681,651	$12,200	$ 38,045,401	$13,401
New York	255,149,759	1,418	827,317,151	65,803	804,132,952	66,475
Philadelphia	84,532,900	558	52,847,155	4,174	18,002,465	5,331
Pittsburgh	55,006,656	811	2,251,751	2,019	10,155,195	4,922
Washington, D.C.	29,991,033	402	20,101,532	9,714	16,118,352	9,840
Atlanta	135,083,394	547	196,923,351	30,493	185,801,505	33,285
Chicago	157,927,715	727	149,016,787	9,860	132,202,766	12,396
Cleveland	78,844,673	571	49,659,293	5,816	37,976,952	6,637
Detroit	28,039,125	531	5,028,247	2,096	4,915,803	3,129
Minneapolis/St. Paul	27,525,226	515	346,405,516	51,133	333,716,447	54,617
St. Louis	71,472,562	482	1,318,906,868	183,843	1,752,870,782	205,276
Dallas	69,742,321	550	29,342,982	8,034	19,590,191	5,034
Houston	65,703,262	790	64,641,459	11,730	70,096,734	20,138
Los Angeles	103,426,932	852	15,394,005	7,068	14,966,736	7,360
San Francisco	172,335,361	425	91,397,273	8,552	88,779,500	9,604
Denver	78,733,857	1,002	3,723,792	11,716	2,840,352	10,993
Total 149 Banks	$1,505,450,136	—	$3,210,638,813	—	$3,530,212,133	—
1981 Average 149 Banks	$ 10,103,692	$ 705	$ 22,933,134	$36,792	$ 25,397,210	$50,149
1980 Average 165 Banks	11,257,764	813	12,019,983	19,262	11,423,479	23,885
1979 Average 149 Banks	13,476,748	727	9,396,938	14,802	7,242,381	18,747
1978 Average 146 Banks	10,132,913	659	4,695,338	7,442	4,430,940	8,790
1981 Median 149 Banks	$ 4,440,672	$ 528	$ 1,371,062	$ 3,496	$ 1,175,195	$ 3,913
1980 Median 165 Banks	4,363,116	496	1,116,643	3,350	817,788	3,448
1979 Median 149 Banks	3,765,978	409	723,152	2,968	662,562	2,970
1978 Median 146 Banks	3,845,017	417	773,775	2,186	606,187	2,262

*Q19; † Q19 ÷ Q18; ‡ Q44; § Q44 ÷ Q42; ‖ Q45; # Q45 ÷ Q43.

Table 22

Age Distribution of Outstanding Exception Items

Dollars Outstanding

Months Outstanding	1978 146 Banks Dollars	Percent	1979 144 Banks Dollars	Percent	1980 143 Banks Dollars	Percent	1981 124 Banks Dollars	Percent
0—1	$297,198,484	67.8%	$601,659,946	70.0%	$541,802,776	61.8%	$454,148,269	61.2%
1—2	68,699,210	15.7	156,719,650	18.2	171,240,399	19.5	165,448,452	22.3
2—4	42,270,491	9.7	57,975,289	6.8	85,763,209	9.8	68,630,665	9.2
4—6	19,464,360	4.4	29,496,372	3.4	43,450,668	5.0	24,743,939	3.3
Over 6	10,581,528	2.4	13,131,047	1.6	34,629,413	3.9	29,250,333	3.9
Total	$438,214,073	100.0%	$859,982,204	100.0%	$876,886,465	100.0%	$742,221,658	100.0%

Q70 = Q71 + Q72 + Q73 + Q74 + Q75

Items Outstanding

Months Outstanding	1978 146 Banks Items	Percent	1979 144 Banks Items	Percent	1980 143 Banks Items	Percent	1981 124 Banks Items	Percent
0—1	87,535	25.3%	104,396	29.9%	88,122	22.8%	80,200	29.1%
1—2	66,527	19.2	87,499	25.2	81,215	21.0	70,395	25.6
2—4	95,115	27.5	70,537	20.2	88,346	22.9	60,030	21.8
4—6	57,242	16.6	46,421	13.3	65,120	16.9	32,134	11.7
Over 6	39,319	11.4	39,914	11.4	63,320	16.4	32,575	11.8
Total	345,738	100.0%	348,767	100.0%	386,123	100.0%	275,334	100.0%

Q76 = Q77 + Q78 + Q79 + Q80 + Q81

Table 23

Age Distribution of Outstanding Exception Items by the Microfilming Method (Average Reporting Banks)

Dollars Outstanding

Months Outstanding	After Reader/Sorter Processing				Before Reader/Sorter Processing				During Reader/Sorter Processing			
	1980 Dollars	1981 Dollars	1980 Percent	1981 Percent	1980 Dollars	1981 Dollars	1980 Percent	1981 Percent	1980 Dollars	1981 Dollars	1980 Percent	1981 Percent
0—1	$1,019,054	$2,479,202	74%	69%	$708,013	$486,878	87%	75%	$3,925,791	$4,014,921	64%	70%
1—2	164,305	813,553	12	23	40,172	65,636	5	10	1,179,715	1,137,824	19	20
2—4	105,577	239,532	8	6	39,107	58,571	5	9	630,641	369,207	10	6
4—6	65,008	23,729	5	1	12,993	16,823	2	3	305,148	86,944	5	2
Over 6	23,468	19,980	2	1	12,333	20,176	1%	3	135,798	125,049	2	2
Total	$1,377,412	$3,575,996	100%	100%	$812,618	$648,084	100%	100%	$6,177,093	$5,733,945	100%	100%

Items Outstanding

Months Outstanding	After Reader/Sorter Processing				Before Reader/Sorter Processing				During Reader/Sorter Processing			
	1980 Items	1981 Items	1980 Percent	1981 Percent	1980 Items	1981 Items	1980 Percent	1981 Percent	1980 Items	1981 Items	1980 Percent	1981 Percent
0—1	373	590	38%	44%	174	153	34%	34%	666	722	27%	34%
1—2	231	380	24	29	129	77	26	17	537	466	22	22
2—4	159	282	16	21	103	81	20	18	549	394	22	19
4—6	100	35	10	3	46	76	9	17	327	229	13	11
Over 6	121	38	12	3	57	59	11	13	403	292	16	14
Total	984	1,325	100%	100%	509	446	100%	100%	2,482	2,103	100%	100%

Table 24

A Comparison of Balancing Policy and Experience

Balancing Procedures

	1978	1979	1980	1981
Always balance	7%	5%	4%	3%
Attempt to balance	85	78	85	85
Very seldom balance	8	17	11	12

Exception Item Growth

	1978	1979	1980	1981
Grown	59%	67%	56%	49%
Remained the same	26	26	25	27
Decreased	15	7	19	24

Adjustment Staff Size

		Number of People		
	132 Banks	1980	1981	Percent Gain or Loss
Grown	26%	894	997	+11.5%
Remained the same	50	804	808	+ 0.5
Decreased	24	887	779	−12.2
Total	100%	2,585	2,584	− 0.04%

problem, and the status of personnel responsible for making interbank adjustments. The trend in balancing procedures remains consistent with past years, as most banks deal with costly float by shipping items before balancing and rely on control procedures to assist the balancer after the items have left the bank. Bankers' perceptions concerning exception item growth seem to be verified by the data; volumes are still high, but they have improved since last year. The detailed analysis of the adjustment staff size reveals that 26% of the responding banks increased staff levels by 11.5% on average, while 24% of the banks decreased staff levels by 12.2%. The net effect is a reduction by one person from the 1980 adjustment staff complement. Adjustment staff levels had risen by 5.2% in 1980 and by 7.3% in 1979.

Transit Holdover

Definition: *Items in transit holdover are those items that were received by a bank before a deadline but were not processed by high- or low-speed systems in time to be sent for collection. These items would result in a loss of float to the bank but not to its customers.*

Transit holdover reflects the speed with which checks are collected. Therefore, it is an important measure of a bank's processing efficiency. In 1981, the average transit holdover rate continued its steady decline to 1.4% of transit items processed, halving the 1978 average rate of 2.8%. This figure was 9.4% in 1973. The average dollar amount of each item held over increased again to 781.00, a 15.2% gain. The median dollar value, however, dropped 13.2% to $478.00 (Table 25).

A better perspective of banker concern about transit holdover is obtained from Table 26. The median rate continued to improve 0.2%, and 69.1% of 1981 reporting banks had a transit holdover rate less than 1%. However, with an increasing dollar value associated with items held over, it is clear that banks must continue to reduce their holdover rates in order to make any real progress from the previous year.

Table 25

Transit Holdover by Area
(Percent of Total Transit Items)

	ADL Banks				All Banks			
Area	**1978**	**1979**	**1980**	**1981**	**1978**	**1979**	**1980**	**1981**
Boston	1.0%	1.2%	3.6%	0.7%	0.5%	0.1%	1.1%	0.2%
New York	9.6	5.1	6.2	3.7	6.2	2.0	2.5	2.4
Philadelphia	0.0	0.0	0.5	1.3	0.2	2.0	1.5	0.3
Pittsburgh	7.5	2.7	2.1	1.7	6.1	1.6	1.3	1.0
Washington, D.C.	2.1	0.0	*	0.4	3.3	1.9	0.9	0.7
Atlanta	0.5	4.5	2.2	0.4	2.2	5.8	2.9	5.4
Chicago	2.4	3.3	2.1	0.5	2.9	4.7	1.4	1.1
Cleveland	12.2	0.7	0.6	0.3	6.4	1.6	0.5	1.3
Detroit	1.8	1.4	1.1	2.0	1.6	1.1	0.7	0.4
Minneapolis/St. Paul	*	*	*	*	*	*	*	0.8
St. Louis	0.5	1.5	1.2	2.1	7.7	2.9	2.3	1.7
Dallas	2.3	0.1	0.2	0.1	2.3	0.5	1.0	6.0
Houston	2.3	1.7	0.1	*	2.1	7.3	3.3	2.4
Los Angeles	0.9	0.9	3.1	*	1.5	0.4	1.4	1.2
San Francisco	0.4	0.7	0.8	0.2	0.4	1.3	1.9	0.4
Denver	0.4	1.1	0.5	*	0.5	0.5	0.2	0.4
Total banks	43	30	36	32	153	153	170	152
Average	3.0%	2.2%	2.3%	1.0%	2.8%	2.5%	1.9%	1.4%

	1978	**1979**	**1980**	**1981**
Average dollar value of item held over	$517	$661	$678	$781
Median dollar value of item held over	$270	$430	$551	$478

*No respondents.

$$\frac{Q11}{Q10 + Q11} \times 100$$

Table 26

Distribution of the Transit Holdover Rate (Percent of Total Transit Items)

Rate	ADL Banks				All Banks			
	1978	1979	1980	1981	1978	1979	1980	1981
0% — 1%	22	14	20	20	93	93	112	105
1% — 2%	4	5	4	6	16	19	21	19
2% — 3%	2	2	3	2	8	9	13	5
3% — 4%	2	3	2	2	6	6	7	4
4% — 5%	1	1	1	1	5	3	3	7
5% — 10%	7	4	5	1	13	14	7	7
10% — 15%	1	1	1	0	5	5	2	2
15% — 20%	2	0	0	0	3	1	2	0
20% — 30%	2	0	0	0	4	1	3	1
Over 30%	0	0	0	0	0	2	0	2
Total banks	43	30	36	32	153	153	170	152
Average	3.0%	2.2%	2.3%	1.0%	2.8%	2.5%	1.9%	1.4%
Median	0.9%	1.2%	0.8%	0.4%	0.5%	0.5%	0.3%	0.2%

$$\frac{Q11}{Q10 + Q11} \times 100$$

Bank Labor Productivity Measurement

This section on check processing productivity presents an analysis of data gathered concerning the distribution of manpower according to the following major task groupings:

- Data control (balancing and correction).
- Encoding operations.
- Check receiving operations.
- Reader/sorter operations.
- Cash letter make-up.
- Microfilming operations.
- On-us paying, filing, and return item processing.
- Exception item processing.
- Bulk filing.

The labor data reported were generally comprehensive. The problem of rounding off was eliminated by requesting the actual item count. Productive man-hours rather than man-days provided a more uniform base. Both the average (arithmetic mean) and median (midpoint value) of the distributions were made.* Caution should be exercised when making comparisons between the following data and individual bank distributions.

Labor Intensiveness

The average total productivity of the 105 reporting banks for the combined check processing tasks climbed 5.1% in 1981 to 551.6 items processed per man-hour from 524.6 items processed per man-hour in 1980 (Table 27). The 1981 median rate, however, jumped 16.7% to 609.8 items per man-hour, from 522.7 items in 1980.

Table 28 presents the total productivity by geographic area. Between 1980 and 1981, for all reporting banks, 10 areas reported an increase in overall labor productivity. Although the Pittsburgh area banks reported the highest productivity average for the third consecutive year, important gains were made by the Atlanta, Philadelphia, Dallas, Washington, D.C., and Boston area institutions.

*The median, by definition, is unaffected by extreme values and is useful as a measure of central tendencies when extreme values are present.

Table 27

Overall Labor Productivity

Checks per Man-Hour	Number of Banks 1978	1979	1980	1981
Under 300	8	16	15	6
300 — 400	31	37	31	14
400 — 500	31	27	24	20
500 — 750	62	71	88	37
750 — 1,000	*	*	*	22
1,000 — 1,250	*	*	*	4
Over 1,250	*	*	*	2
Total banks	132	151	158	105
Average	522.9	530.0	524.6	551.6
Median	474.2	490.3	522.7	609.8

*No comparable data collected.

Q16
Sum of Q46 through Q68

Table 28

Overall Labor Productivity by Area

Area	ADL Banks 1978	1979	1980	1981	All Banks 1978	1979	1980	1981
Boston	570.5	722.4	534.3	625.0	573.9	566.1	559.1	680.1
New York	380.2	397.0	500.0	495.6	394.7	392.7	551.6	536.8
Philadelphia	823.7	332.5	963.4	829.7	581.2	587.7	465.1	612.4
Pittsburgh	618.9	604.6	785.1	832.4	563.4	661.5	771.2	788.3
Washington, D.C.	435.2	460.0	571.9	*	555.5	522.0	565.5	690.7
Atlanta	459.9	541.9	677.0	863.9	496.2	513.0	567.9	723.7
Chicago	406.9	376.1	486.5	519.1	399.7	548.1	505.2	584.9
Cleveland	479.4	437.7	402.1	474.0	467.8	480.3	517.5	493.0
Detroit	357.0	379.2	343.0	449.1	376.2	529.5	488.3	456.4
Minneapolis/St. Paul	*	*	*	*	*	*	*	733.3
St. Louis	596.5	626.5	624.4	609.8	552.0	542.4	613.3	689.7
Dallas	954.8	723.2	658.9	1,219.6	871.2	628.6	602.3	739.7
Houston	861.4	677.9	587.6	803.5	730.0	492.5	462.2	486.7
Los Angeles	381.3	544.3	570.6	*	476.3	641.6	634.0	529.5
San Francisco	957.1	618.0	664.9	585.3	686.1	508.4	670.9	727.7
Denver	703.1	495.6	749.9	400.1	587.6	516.9	624.8	414.2
Total banks	43	30	35	23	118	151	158	105
Average	550.8	514.7	506.8	521.2	522.9	530.0	524.6	551.6
Median	508.6	529.0	570.6	636.5	474.2	490.3	522.7	609.8

*No respondents.

Q16
Sum of Q46 through Q68

Labor Distribution

A distribution of the percentage of labor among various tasks performed is shown in Table 29. In order to examine the productivity of certain elements of the check processing operation more closely, two new tasks were added to the 1980 survey: check receiving (Task C) and bulk filing (Task H). In reviewing the distribution of labor in the two most productive categories, it is interesting to note the trade-off between encoding (Task B) and check receiving (Task C). Although these item processing departments seemed to be organized much differently, consistent productivity rates have been achieved. In reviewing the 1981 average statistics for on-us processing (Task F) and bulk filing (Task H), a decrease was noted in the labor intensiveness of each function, as the implementation of bulk filing techniques continues in the industry.

Data Control—Balancing and Correction

In 1981, both the average and median rates for labor productivity in the balancing and correction functions increased over 1980 (Table 30). The average number of checks processed per man-hour in 1981 was 3,218.2, an increase of 11.7% from 1980, while the median number of checks processed per man-hour in 1981 was 4,250.0, an increase of 19.5% from 1980.

Encoding Operations

Table 31 presents the combined average labor productivity for single-pocket and multipocket encoding machines. The 1981 average number of items encoded per man-hour was 875.6, a slight increase over the 1980 rate of 864.7 items. The median rate also improved slightly over 1980; however, productivity levels are just returning to 1978 levels.

Tables 32 and 33 show the encoding productivity for single-pocket and multipocket machines. The average number of items encoded on a single-pocket machine was 919.7 items per man-hour, an increase from the 863.9 items per man-hour reported in 1980, and approaching the 929.6 item level reported in 1977. The median rate of encoding labor productivity on single-pocket machines increased 2.5% during the 1981 survey period. The average rate for encoding labor productivity on multipocket machines rose 11.9% from 1980, while the median rate increased 18.1%, both rates surpassing 1977 levels for this statistic. This trend in encoding productivity is expected to continue as new incentive plans are adopted for inscriber operators. Some banks have achieved dramatic results by linking productivity rates with error rates.

Table 34 shows the number of items encoded per man-hour by the percent of pre-encoded items received. In 1981, the banks that received the highest percentage of encoded items reported the lowest encoding productivity. This year's data appear to reinforce the adage "that practice makes perfect." Another emerging trend is the growth in the percentage of banks receiving 80%–100% of encoded incoming items; in 1981, 12.8% of the reporting banks responded in this category.

Table 29

Distribution of Labor by Overall Labor Productivity

Checks per Man-Hour*	Number of Banks	Percent of Labor by Tasks†								
		A	B	C	D	E	F	G	H	I
Under 300	6	24.6	20.0	6.1	3.3	9.2	22.0	2.8	0.0	11.9
300— 400	14	13.2	25.4	5.6	4.4	6.8	26.9	5.9	1.2	10.6
400— 500	20	19.5	28.5	5.6	3.5	7.9	23.2	5.1	1.1	5.6
500— 750	37	13.8	28.6	5.7	4.1	7.4	25.3	7.7	1.9	5.3
750—1,000	22	14.3	36.1	6.0	4.4	7.0	15.1	8.9	3.6	4.6
1,000—1,250	4	13.9	22.4	12.6	5.4	10.9	16.8	14.0	3.2	0.9
Over 1,250	2	12.9	34.5	1.8	4.1	8.6	18.5	12.9	1.4	5.3
Average, all banks 1981	105	17.2	28.8	5.7	4.0	6.8	21.3	6.5	1.6	8.1
Average, all banks 1980	158	18.3	26.2	4.5	4.5	6.9	22.7	6.6	3.2	7.0
Average, all banks 1979	151	18.4	30.4	‡	4.2	7.5	27.9	6.6	‡	5.0
Average, all banks 1978	132	20.0	26.7	‡	3.9	7.4	28.2	6.3	‡	7.5
ADL 1981	23	18.6	28.9	5.3	3.8	6.1	20.3	5.8	1.3	9.9
ADL 1980	35	19.9	21.7	5.2	4.9	6.7	20.8	6.9	2.9	11.0
ADL 1979	30	23.3	25.7	‡	4.8	7.8	22.6	9.0	‡	6.7
ADL 1978	43	21.8	23.8	‡	4.4	8.0	26.7	6.7	‡	8.6

*$\frac{\text{Q16}}{\text{Sum of Q46 through Q68}}$; ‡No comparable data collected.

†Tasks

A. Data control balancing and correction — $\frac{\text{Q48 + Q49}}{\text{Sum of Q46 through Q68}} \times 100$

B. Encoding operations — $\frac{\text{Q50 + Q51 + Q54 + Q55}}{\text{Sum of Q46 through Q68}} \times 100$

C. Check receiving — $\frac{\text{Q52 + Q53}}{\text{Sum of Q46 through Q68}} \times 100$

D. Reader/sorter operations — $\frac{\text{Q56 + Q57}}{\text{Sum of Q46 through Q68}} \times 100$

E. Cash letter make-up and microfilming operations — $\frac{\text{Q58 + Q59 + Q60 + Q61}}{\text{Sum of Q46 through Q68}} \times 100$

F. On-us paying, filing, and return item processing — $\frac{\text{Q62 + Q63 + Q66 + Q67}}{\text{Sum of Q46 through Q68}} \times 100$

G. Exception item processing — $\frac{\text{Q46 + Q47}}{\text{Sum of Q46 through Q68}} \times 100$

H. Bulk filing — $\frac{\text{Q64 + Q65}}{\text{Sum of Q46 through Q68}} \times 100$

I. Non-officer processing time not including "A" through "H" tasks — $\frac{\text{Q68}}{\text{Sum of Q46 through Q68}} \times 100$

Table 30

Balancing and Correction Labor Productivity

Checks per Man-Hour	1978	1979	1980	1981
Under 1,000	2	9	5	7
1,000 — 2,000	29	24	27	15
2,000 — 3,000	42	47	37	23
3,000 — 4,000	22	23	21	20
4,000 — 5,000	16	12	21	23
5,000 — 6,000	10	2	13	11
6,000 — 7,000	4	5	9	8
7,000 — 8,000	6	5	6	9
8,000 — 9,000	18	24	28	3
9,000 — 10,000	*	*	*	2
10,000 — 15,000	*	*	*	14
Over 15,000	*	*	*	12
Total banks	149	151	167	147
Average	2,558.9	2,455.9	2,880.4	3,218.2
Median	3,027.9	2,894.6	3,556.5	4,250.0

*No comparable data collected.

$$\frac{Q9}{Q48 + Q49}$$

Table 31

Encoding Labor Productivity

	Number of Banks			
Checks per Man-Hour	1978	1979	1980	1981
Under 600	22	25	19	12
600 — 700	14	24	15	14
700 — 800	27	23	26	17
800 — 900	29	31	27	34
900 — 1,000	28	17	27	21
1,000 — 1,100	31	31	51	13
1,100 — 1,200	*	*	*	13
1,200 — 1,300	*	*	*	5
1,300 — 1,400	*	*	*	3
1,400—1,500	*	*	*	6
Over 1,500	*	*	*	11
Total banks	151	151	165	149
Average	927.6	859.1	864.7	875.6
Median	833.9	815.8	878.7	880.5

*No comparable data collected.

$$\frac{Q3 + Q4 + Q5 + Q6}{Q50 + Q51 + Q54 + Q55}$$

Table 32

Encoding Labor Productivity for the Single-Pocket Machine

Checks per Man-Hour	Number of Banks 1978	1979	1980	1981
Under 600	13	15	18	12
600 — 700	14	24	9	11
700 — 800	21	19	27	13
800 — 900	27	27	25	33
900 — 1,000	27	16	25	21
1,000 — 1,100	11	16	17	13
1,100 — 1,200	8	4	14	12
1,200 — 1,300	11	14	20	8
1,300 — 1,400	*	*	*	3
1,400 — 1,500	*	*	*	5
Over 1,500	*	*	*	12
Total banks	132	135	155	143
Average	844.9	881.4	863.9	919.7
Median	864.2	849.1	891.5	913.7

*No comparable data collected.

$$\frac{Q3 + Q4}{Q50 + Q51}$$

Table 33

Encoding Labor Productivity for the Multipocket Machine

Checks per Man-Hour	Number of Banks 1978	1979	1980	1981
0— 100	3	3	3	3
100— 200	3	4	6	2
200— 300	3	5	4	2
300— 400	6	6	5	2
400— 500	7	3	6	9
500— 600	10	4	9	3
600— 700	5	6	6	3
700— 800	7	9	7	10
800— 900	11	8	7	7
900—1,000	4	0	4	4
1,000—1,100	1	1	1	2
1,100—1,200	2	1	2	2
Over 1,200	3	2	8	8
Total banks	65	52	68	57
Average	656.5	627.8	685.4	766.7
Median	620.6	610.2	616.2	727.7

$$\frac{Q5 + Q6}{Q54 + Q55}$$

Table 34

Items Encoded per Man-Hour by Percent of Pre-encoded Items

Percent of Incoming Items Already Encoded*	Number of Banks				Items Encoded per Man-Hour†			
	1978	1979	1980	1981	1978	1979	1980	1981
80%—100%	9	11	16	19	735.0	652.2	776.0	818.5
60%— 80%	39	36	40	38	809.9	788.6	955.4	979.7
40%— 60%	64	52	60	58	776.5	868.5	1,040.7	1,412.7
0%— 40%	38	52	49	34	874.8	943.1	885.0	1,496.8
Total banks	150	151	165	149				
Average productivity					803.3	859.1	864.7	875.6

* $\frac{Q1 + Q2}{Q9} \times 100$

† $\frac{Q3 + Q4 + Q5 + Q6}{Q50 + Q51 + Q54 + Q55}$

Check Receiving Operations

Table 35 shows the productivity figures for the check receiving function. These operational data were surveyed for the first time in 1980. The results are again somewhat inconsistent. The average number of checks processed per man-hour was 8,969.9, while the median number reported was 14,331. In many cases, check receiving departments initially handle both encoded and unencoded deposits, and then forward the work to either the encoding or the reader/sorter job stream. Banks receiving larger percentages of pre-encoded work should be achieving greater productivity in the check receiving operation, because some of the preparation work of batch headers and receipts has been accomplished by the depositor.

Table 35

Check Receiving Productivity (Pre-encoded Deposits)

Checks per Man-Hour	Number of Banks	
	1980	1981
Under 5,000	41	27
5,000—10,000	44	30
10,000—15,000	34	21
15,000—20,000	11	30
20,000—25,000	12	9
25,000—30,000	3	7
Over 30,000	18	25
Total banks	163	149
Average	6,518.6	8,969.9
Median	9,112.7	14,331.3

$\frac{Q9}{Q52 + Q53}$

Reader/Sorter Operations

Average reader/sorter labor productivity improved 11.1% to 13,044.3 checks processed per man-hour (Table 36), while the median rate fell 12.0% to 17,531.5 items per man-hour. Of the reporting banks, 74% processed more than 10,000 items per man-hour.

Table 36
Reader/Sorter Labor Productivity

	Number of Banks			
Checks per Man-Hour	**1978**	**1979**	**1980**	**1981**
Under 5,000	7	17	18	11
5,000—10,000	29	28	29	29
10,000—15,000	26	25	14	22
15,000—20,000	14	12	22	24
20,000—25,000	19	12	13	12
25,000—30,000	19	19	18	12
30,000—35,000	36	38	52	5
35,000—40,000	*	*	*	7
40,000—45,000	*	*	*	6
45,000—50,000	*	*	*	6
50,000—75,000	*	*	*	13
Over 75,000	*	*	*	5
Total banks	150	151	166	152
Average	12,423.4	12,526.9	11,740.3	13,044.3
Median	18,309.6	16,675.1	19,917.3	17,531.5

*No comparable data collected.

$$\frac{Q7}{Q56 + Q57}$$

Cash Letter Make-Up and Microfilming

Table 37 shows combined cash letter make-up and microfilming labor productivity. The average rate of items processed per man-hour decreased slightly in 1981, while the median rate decreased 13.5%.

Separate tables are shown for cash letter make-up (Table 38) and microfilming (Table 39). Both the average and the median rates for cash letter make-up productivity dropped in 1981. The average rate fell 4.9% to 5,483.6 items per man-hour, while the median rate fell 12.8% to 6,732.7 items per man-hour. These figures probably reflect an increased number of direct send endpoints established during the year as a result of Federal Reserve pricing implementation. In many cases, the same amount of time is required to prepare a cash letter with relatively few items as it is to prepare a larger cash letter. The average number of items microfilmed per man-hour increased from 7,933.1 items per man-hour in 1980 to 8,970.5 items in 1981. The median rate, however, decreased in 1981 to 6,639.3 items per man-hour from the 1980 rate of 8,924.2 items.

Approximately 13% of the microfilmed items were filmed before reader/sorter processing, 6% were microfilmed after reader/sorter processing, and nearly 81% of the items were microfilmed during reader/sorter processing. In 1980, 76% of the items were microfilmed during reader/sorter processing.

Table 37

Cash Letter Make-Up and Microfilming Labor Productivity

Checks per Man-Hour	Number of Banks 1978	1979	1980	1981
Under 2,000	2	7	5	6
2,000— 3,000	7	5	10	15
3,000— 4,000	11	10	10	11
4,000— 5,000	5	11	18	11
5,000— 6,000	18	13	12	12
6,000— 7,000	12	9	12	14
7,000— 8,000	18	13	13	8
8,000— 9,000	6	12	10	7
9,000—10,000	13	10	13	11
10,000—12,000	51	62	64	15
12,000—15,000	*	*	*	6
15,000—20,000	*	*	*	9
Over 20,000	*	*	*	14
Total banks	143	152	167	139
Average	7,262.3	6,261.0	6,323.3	6,214.8
Median	7,823.4	8,612.8	8,203.5	7,096.6

$$\frac{Q10 + Q11 + Q20 + Q21}{Q58 + Q59 + Q60 + Q61}$$

*No comparable data collected.

Table 38

Cash Letter Make-Up Labor Productivity

Checks per Man-Hour	ADL Banks 1978	1979	1980	1981	All Banks 1978	1979	1980	1981
Under 2,000	4	1	1	1	8	11	8	7
2,000— 4,000	6	5	8	6	24	26	28	30
4,000— 6,000	17	7	9	8	34	22	29	26
6,000— 8,000	5	7	4	2	17	21	23	20
8,000—10,000	4	6	6	4	15	20	24	19
10,000—12,000	4	0	1	2	16	12	15	13
12,000—15,000	1	2	4	4	10	12	10	8
15,000—20,000	2	2	3	2	24	26	32	11
Over 20,000	*	*	*	2	*	*	*	13
Total banks	43	30	36	31	148	152	169	147
Average	5,073.7	4,996.5	5,191.9	5,579.5	5,626.3	5,556.6	5,768.3	5,483.6
Median	5,424.9	6,495.7	6,004.4	6,349.3	6,878.2	7,514.7	7,717.9	6,732.7

$$\frac{Q10 + Q11}{Q58 + Q59}$$

*No comparable data collected.

Table 39
Microfilming Labor Productivity

Checks per Man-Hour	ADL Banks 1978	1979	1980	1981	All Banks 1978	1979	1980	1981
Under 2,000	13	5	6	6	24	20	28	23
2,000— 4,000	2	3	5	7	6	16	14	19
4,000— 6,000	6	3	2	4	13	15	12	14
6,000— 8,000	2	4	1	0	9	11	11	15
8,000—10,000	3	2	5	0	20	13	14	7
10,000—12,000	6	0	1	2	27	12	11	11
12,000—15,000	4	1	1	2	18	12	14	8
15,000—18,000	7	7	7	0	30	35	39	3
18,000—21,000	*	*	*	2	*	*	*	5
21,000—30,000	*	*	*	0	*	*	*	5
30,000—50,000	*	*	*	1	*	*	*	4
Over 50,000	*	*	*	0	*	*	*	5
Total banks	43	25	28	24	147	134	143	119
Average	12,222.7	14,439.7	9,132.2	6,727.3	11,129.7	12,609.1	7,933.1	8,970.5
Median	6,543.4	6,358.0	8,133.1	4,508.5	10,175.6	8,790.3	8,924.2	6,639.3

*No comparable data collected.

$$\frac{Q20 + Q21}{Q60 + Q61}$$

On-Us Processing—Paying, Filing, and Return Items

Average on-us labor productivity declined 14.7% in 1981 to 823.9 checks processed per man-hour. The median rate of on-us processing labor productivity dropped sharply from 933.3 items per man-hour in 1980 to 799.4 items in 1981 (Table 40). An analysis of the relationship between labor productivity for processing on-us items and the percentage of on-us items received by the bank (Table 41) continues to yield fairly consistent results; however, the increase in the percentage of banks that have less than 20% of their total items processed as on-us checks is noteworthy. In 1981, the number of banks in that category rose from 10.6% to 31.7% of the respondents.

Bulk Filing Labor

Bulk filing productivity was measured for the first time in this year's survey. Due to the variance in the number of accounts subject to bulk filing at the different banks, there is a wide range of man-hours devoted to these tasks. In 1981, the average productivity was 4,423.5 items per man-hour, while the median value was 5,232.4 items per man-hour (see Table 42).

Table 40

On-Us Processing Labor Productivity (Paying, Filing, and Return Item Processing)

Checks per Man-Hour	Number of Banks 1978	1979	1980	1981
Under 300	4	13	10	12
300— 400	13	14	5	11
400— 500	16	20	15	10
500— 600	19	18	15	4
600— 700	20	9	12	10
700— 800	11	14	9	13
800— 900	7	10	9	8
900—1,000	10	12	11	9
1,000—1,200	43	41	74	14
1,200—1,500	*	*	*	5
1,500—2,500	*	*	*	9
2,500—5,000	*	*	*	11
Over 5,000	*	*	*	4
Total banks	143	151	160	120
Average	830.6	1,066.3	965.4	823.9
Median	697.7	705.6	933.3	799.4

$$\frac{Q12 + Q13 + Q14}{Q62 + Q63 + Q66 + Q67}$$

*No comparable data collected.

Table 41

Percent of On-Us Items Received and On-Us Processing Labor Productivity

Percent of On-Us Items Received*	Number of Banks 1978	1979	1980	1981	Checks Processed per Man-Hour† 1978	1979	1980	1981
Under 20%	12	11	17	38	586.5	564.2	685.6	624.3
20%—40%	43	50	47	37	623.6	785.1	1,220.0	965.3
40%—60%	61	60	64	30	851.4	1,225.8	1,917.6	2,006.9
Over 60%	26	30	32	15	1,137.1	1,400.2	2,124.5	1,831.5
Total banks	142	151	160	120				
Average productivity					830.6	1,006.3	965.4	823.9

* $\frac{Q12 + Q13 + Q14}{Q16} \times 100$

†Average within each percentage group.

$$\frac{Q12 + Q13 + Q14}{Q62 + Q63 + Q66 + Q67}$$

Table 42
Bulk Filing Labor Productivity

Checks per Man-Hour	Number of Banks 1981
Under 1,500	9
1,500— 3,000	15
3,000— 4,500	9
4,500— 10,000	16
10,000— 25,000	8
25,000— 50,000	7
50,000—100,000	5
Over 100,000	3
Total banks	72
Average	4,423.5
Median	5,232.4

$$\frac{Q15}{Q64 + Q65}$$

Exception and Return Item Processing

As shown in Table 43, the average and median productivity rates in the exception and return item processing area decreased again in 1981. The average rate dropped 10.2% to 23.8 items, while the median rate decreased 9.7% to 21.5 items per man-hour.

Table 44 reveals a continuation of the disappointing trend in return item productivity. The average labor productivity fell 10.6% to 48.2 items processed per man-hour in 1981 from 53.9 items in 1980, while median return item labor productivity decreased from 47.4 items per man-hour in 1980 to 43.6 items in 1981. Productivity levels for return items can be expected to improve when this labor intensive operation becomes automated. Some banks have implemented systems this year, but the real impetus will come if the endorsement standard, recently approved by the American National Standards Institute, is adopted by the major check clearing banks.

Table 45 presents an analysis of the number of items resolved per man-hour compared to the exception and return items discovered. The consistent trend in resolving 3.1 exception items per man-hour, on average is shown in Table 46.

Table 43
Exception and Return Item Productivity

Items per Man-Hour	ADL Banks 1978	1979	1980	1981	All Banks 1978	1979	1980	1981
Under 10	0	1	0	0	11	18	17	13
10— 15	4	2	4	4	20	16	19	24
15— 20	6	4	5	4	28	19	27	21
20— 25	3	4	5	1	21	16	23	18
25— 30	6	2	6	4	17	11	20	13
30— 35	7	7	3	6	15	20	16	13
35— 40	5	1	2	6	10	11	8	13
40— 45	3	6	4	0	5	12	10	3
45— 50	0	1	2	2	1	5	5	3
50—100	9	0	3	3	15	7	13	10
Over 100	0	2	2	0	3	8	6	2
Total banks	43	30	36	30	146	143	164	133
Average	29.0	36.3	29.1	28.1	25.6	34.4	26.5	23.8
Median	31.2	29.9	28.4	31.6	23.1	27.8	23.8	21.5

$$\frac{Q18 + Q42 + Q43}{Q46 + Q47 + Q66 + Q67}$$

Table 44

Return Item Productivity

Items per Man-Hour	ADL Banks 1979	ADL Banks 1980	ADL Banks 1981	All Banks 1979	All Banks 1980	All Banks 1981
Under 15	1	0	1	12	15	14
15— 20	0	0	0	5	4	8
20— 25	1	1	2	12	14	10
25— 30	0	3	2	8	17	10
30— 35	1	1	2	13	10	13
35— 40	1	1	0	7	8	13
40— 45	1	1	2	11	9	5
45— 50	4	3	0	6	8	6
50— 65	16	20	4	45	52	19
65— 80	5	6	10	26	29	15
80—100	*	*	5	*	*	13
100—120	*	*	0	*	*	1
120—200	*	*	2	*	*	7
Over 200	*	*	0	*	*	7
Total banks	30	36	30	166	166	141
Average	78.1	68.4	61.4	84.8	53.9	48.2
Median	61.6	64.4	69.1	48.7	47.4	43.6

*No comparable data collected.

$$\frac{Q18}{Q66 + Q67}$$

Table 45

Exception and Return Item Productivity by Rate Discovered

Exception Item Rate per 100,000 Items Sent*	Number of Banks 1978	1979	1980	1981	Items Resolved per Man-Hour† 1978	1979	1980	1981
0— 500	15	7	8	8	20.3	41.2	29.2	11.6
500—1,000	77	62	76	77	19.2	30.0	27.3	23.2
1,000—1,500	29	39	55	31	28.6	30.5	32.7	40.6
1,500—2,000	16	18	17	8	34.0	45.1	34.8	34.7
2,000—2,500	5	9	5	4	59.8	52.6	77.8	34.9
2,500—3,000	2	3	2	1	37.2	38.5	39.1	39.0
Over 3,000	1	5	0	4	29.9	37.5	*	29.5
Total banks	145	143	163	133				
Average					25.7	34.4	26.3	23.6
Median					23.3	27.8	23.7	21.5

* $\frac{Q18 + Q42}{Q10} \times 100{,}000$

† $\frac{Q18 + Q42 + Q43}{Q46 + Q47 + Q66 + Q67}$

Table 46

Exception Item Productivity

Items per Man-Hour	ADL Banks 1978	1979	1980	1981	All Banks 1978	1979	1980	1981
0— 2	9	10	13	8	43	54	55	41
2— 3	4	4	6	5	24	21	30	23
3— 4	3	5	2	4	16	18	18	21
4— 5	12	4	2	4	18	10	11	8
5—10	11	5	8	6	30	26	29	23
10—15	1	0	2	3	6	7	6	9
15—20	0	0	2	1	3	1	4	4
Over 20	3	2	1	0	8	13	14	12
Total banks	43	30	36	31	148	150	167	141
Average	3.3	2.7	3.2	3.3	3.0	2.9	3.1	3.1
Median	4.4	3.2	2.9	3.6	3.4	3.0	3.0	3.4
							Q42 + Q43	
							Q46 + Q47	

Automated Reject Processing Productivity

In 1981, 64.3% of the respondent banks reported automated reject processing capabilities. The productivity experienced by the 101 reporting banks in the automated reject processing area is shown in Tables 47 and 48. The average productivity decreased 19.4% to 248.3 items per man-hour, while the median rate decreased slightly to 342.8 items per man-hour. The productivity rates given reflect the processing of other rejects by manual methods.

Labor Productivity Summary

The "average" bank responding to the 1981 survey used approximately 1.0 less man-hours per 10,000 items processed than in 1980. The average expenditure of man-hours in check processing per 10,000 items processed has been steadily declining during the survey years because of productivity increases and technological advances. It is anticipated that as the usage of such systems as automated reject processing and bulk filing grows, and as bankers become more familiar with system operations and applications through advanced training techniques, productivity gains will continue to be realized.

Table 47
Reject Processing Productivity by Area

Area	ADL Banks 1978	1979	1980	1981	All Banks 1978	1979	1980	1981
Boston	631.4	471.8	255.2	534.9	606.2	586.1	345.9	576.6
New York	238.5	375.0	236.3	309.6	241.9	439.5	375.6	443.5
Philadelphia	428.1	*	203.7	776.8	383.7	408.8	397.0	549.2
Pittsburgh	705.1	507.9	737.2	737.3	705.1	527.6	737.2	737.3
Washington, D.C.	*	*	*	165.3	305.3	335.3	383.7	394.8
Atlanta	225.2	299.6	358.1	377.3	314.9	290.1	554.6	465.7
Chicago	414.5	1,100.0	333.9	545.0	398.9	881.4	355.1	432.7
Cleveland	492.2	*	158.9	160.1	533.2	880.3	281.7	287.2
Detroit	675.8	304.2	429.4	352.6	675.8	461.0	369.7	476.4
Minneapolis/St. Paul	*	*	*	443.9	*	*	*	478.9
St. Louis	*	*	374.2	129.8	441.0	500.7	439.3	493.9
Dallas	255.6	298.6	669.8	237.5	260.0	298.6	477.6	209.6
Houston	252.4	341.0	290.3	241.3	292.8	475.5	610.1	304.7
Los Angeles	1,002.8	305.5	489.7	*	240.9	824.3	962.9	326.6
San Francisco	200.1	211.9	190.8	441.2	225.0	350.1	365.1	371.4
Denver	695.9	*	500.6	851.2	695.9	399.1	641.4	518.0
Total banks	24	18	25	28	67	68	110	101
Average	267.9	282.0	315.5	234.5	296.9	308.6	307.9	248.3
Median	411.3	299.5	323.6	322.2	420.4	395.1	357.2	342.8
								Q97 / Q98

*No respondents.

Table 48
Reject Processing Productivity

Checks per Man-Hour	Number of Banks 1978	1979	1980	1981
Under 100	1	3	6	10
100— 200	8	8	20	15
200— 300	17	15	19	16
300— 400	5	9	16	17
400— 500	10	10	16	11
500— 600	7	6	10	7
600— 700	6	2	5	4
700— 800	13	15	18	5
800— 900	*	*	*	4
900—1,000	*	*	*	5
Over 1,000	*	*	*	7
Total banks	67	68	110	101
Average	296.9	308.6	307.9	248.3
Median	420.4	395.1	357.2	342.8
				Q97 / Q98

*No comparable data collected.

Average Man-Hour Expenditure per 10,000 Items*

Tasks	Man-Hours			
	1978	1979	1980	1981
Balancing and corrections	4.1	3.5	3.5	3.1
Encoding	5.5	5.7	5.0	5.2
Check receiving	‡	‡	0.9	1.0
Reader/sorter operations	0.8	0.8	0.9	0.7
Cash letter make-up and microfilming	1.5	1.4	1.3	1.2
On-us paying, filing, and return items processing	5.8	5.3	4.3	3.9
Exception item processing	1.3	1.0	1.3	1.2
Bulk filing	‡	‡	0.6	0.3
Miscellaneous labor	1.5	1.2	1.3	1.5
Total man-hours†	20.5	18.9	19.1	18.1

*Total man-hours times the distribution of labor from Table 29.

†10,000 items divided by the average overall productivity from Table 27.

‡No comparable data collected.

Performance Measurement Statistics

Reject Reentry

Several banks have the capability of high-speed reentry of prime pass rejects under software system control. Although the rejected item should be properly merged into its appropriate place in the captured data base, some banks have experienced difficulties in the subsequent balancing operation as a result of using high-speed reject reentry.

According to the 1981 survey, 56 of the reporting banks (36%) were using the system. Both the average and the median reject rates *after* high-speed reentry remained the same as reported in 1980 (Table 49). Table 50 shows the distribution of the reject rate after high-speed reentry; 25% of the respondents in this category report that they have virtually eliminated their rejects after the high-speed operation, although some of these banks may be improving the situation by putting repair strips on prime pass rejects before reentry.

Table 49

Reject Rate After Reader/Sorter High-Speed Reject Reentry by Area

Area	ADL Banks		All Banks	
	1980	1981	1980	1981
Boston	0.2%	0.3%	0.1%	0.2%
New York	1.7	1.0	1.4	0.8
Philadelphia	*	0.9	0.7	0.9
Pittsburgh	1.6	*	1.6	*
Washington, D.C.	0.9	*	1.0	0.4
Atlanta	1.7	*	1.0	0.9
Chicago	0.9	1.5	1.0	0.9
Cleveland	0.9	1.2	0.8	1.0
Detroit	0.7	0.3	0.4	0.1
Minneapolis/St. Paul	*	*	*	1.0
St. Louis	0.5	*	0.7	0.6
Dallas	*	0.9	*	0.9
Houston	0.1	*	0.5	1.1
Los Angeles	0.2	*	0.3	0.5
San Francisco	0.2	0.6	0.4	0.4
Denver	1.4	1.2	1.0	0.5
Total banks	23	17	68	56
Average	0.8%	1.0%	0.8%	0.8%
Median	0.8%	1.0%	0.7%	0.7%

*No respondents.

$$\frac{Q31}{Q7} \times 100$$

Table 50

Distribution of the Reject Rate After High-Speed Reject Reentry

Reject Rate	ADL Banks 1980	ADL Banks 1981	All Banks 1980	All Banks 1981
0%—0.1%	2	2	11	14
0.1%—0.3%	8	1	14	4
0.3%—0.5%	0	2	5	6
0.5%—0.8%	1	2	7	8
0.8%—1.0%	4	1	10	4
1.0%—1.5%	1	7	8	14
1.5%—2.0%	4	1	6	5
2.0%—2.5%	3	1	5	1
2.5%—3.0%	0	0	2	0
Over 3.0%	0	0	0	0
Total banks	23	17	68	56
Average	0.8	1.0	0.8	0.8
Median	0.8	1.0	0.7	0.7

$$\frac{Q31}{Q7} \times 100$$

A bank that does not utilize high-speed reentry might employ other means to modify the captured data base with the required MICR line information from rejects. Some banks use CRT operators to key the information through terminals. This method of on-line reject reentry has several disadvantages, including low productivity, human error, and training time. When the number of rejects has been significantly reduced by high-speed reentry, however, the disadvantages of CRT on-line reject reentry are, at least, minimized.

Tables 51 and 52 show the average number of reentered rejects from the prime pass, and from subsequent passes, respectively, according to area of the nation. In Table 53, the average reject reentry productivity is given by geographic area, while Table 54 relates the productivity distribution of banks according to checks processed per man-hour. The average rate of reject reentry productivity increased 38.7% to 270.9 items per man-hour, while the median rate improved slightly to 292.5 items per man-hour. The wide range in productivity is explained by comparing the key entry method of on-line reentry as opposed to automated reject processing.

Table 51

Average Number of Rejects Reentered from the First Pass by Area

Area	All Banks 1980	All Banks 1981
Boston	35,326.8	23,381.9
New York	48,795.5	40,925.0
Philadelphia	18,906.7	28,702.6
Pittsburgh	24,792.0	26,102.5
Washington, D.C.	24,053.1	21,760.3
Atlanta	27,886.1	34,334.6
Chicago	30,996.0	39,406.6
Cleveland	37,801.1	28,955.5
Detroit	25,025.6	10,911.5
Minneapolis/St. Paul	*	6,069.0
St. Louis	18,523.3	21,710.3
Dallas	86,844.0	45,098.0
Houston	15,633.1	37,083.5
Los Angeles	59,173.9	36,448.3
San Francisco	59,767.4	94,456.1
Denver	29,711.0	31,318.3
Total banks	124	118

*No respondents.

Table 52

Average Number of Rejects Reentered from Subsequent Passes by Area

Area	All Banks 1980	All Banks 1981
Boston	6,193.0	3,416.7
New York	1,202.4	262.8
Philadelphia	2,098.4	1,248.8
Pittsburgh	0.0	0.0
Washington, D.C.	0.0	885.6
Atlanta	1,634.8	5,156.6
Chicago	1,220.7	2,603.0
Cleveland	344.3	626.4
Detroit	0.0	0.0
Minneapolis/St. Paul	*	0.0
St. Louis	0.0	0.0
Dallas	0.0	0.0
Houston	5,722.5	545.3
Los Angeles	2,452.6	22.3
San Francisco	1,460.9	2,203.8
Denver	2,617.5	337.8
Total banks	124	118

*No respondents.

Table 53

Reject Reentry Productivity by Area

Area	All Banks 1980	1981
Boston	267.3	544.7
New York	358.7	488.8
Philadelphia	303.5	315.9
Pittsburgh	219.8	320.6
Washington, D.C.	259.7	264.3
Atlanta	377.5	338.8
Chicago	729.4	322.9
Cleveland	285.2	214.0
Detroit	368.8	314.0
Minneapolis/St. Paul	*	337.2
St. Louis	207.6	251.0
Dallas	426.4	275.3
Houston	406.7	443.6
Los Angeles	426.0	471.6
San Francisco	353.3	440.2
Denver	355.4	366.7
Total banks	122	110
Average	195.3	270.9
Median	286.0	292.5

*No respondents.

Q89
Q90

Table 54

Reject Reentry Productivity

Checks per Man-Hour	Number of Banks 1980	1981
Under 100	15	16
100— 200	33	18
200— 300	14	23
300— 400	21	15
400— 500	14	17
500— 600	9	7
600— 700	4	3
700— 800	12	6
800— 900	*	1
900—1,000	*	1
Over 1,000	*	3
Total banks	122	110
Average	195.3	270.9
Median	286.0	292.5

*No comparable data collected.

Q89
Q90

Automated Reject Processing

The main features of an automated reject processing system include:

- Machine stripping of the reject.
- OCR reading of the original MICR line.
- Automated encoding of MICR data on the strip.
- Automated reentering of the MICR line information in the appropriate place in the captured data base.

Table 55 outlines the response to the survey questionnaire concerning the usage of automated reject processing equipment, with 19% of the respondents using only automated equipment, and 42% using automated equipment in combination with manual processing methods. Of the 39% of the respondents not utilizing automated reject processing, 44% plan to acquire the capability, with an additional 45% still undecided.

In 63% of the respondent banks using automated equipment, reject processing is accomplished on-line. Of these same banks, only 12% stated that they repaired all fields in the MICR line; 16% responded that they did not repair all fields in the MICR line; 40% stated that they repaired all fields for selected banks; and 32% responded that they would repair all fields, only if operator intervention is not required.

Table 55

Automated Reject Processing

Use of Automated Processing	**1980**	**1981**
No	37%	39%
Yes, exclusively	18	19
Yes, in combination with manual methods	45	42
If no, do you plan to acquire automated reject processing?		
No	28%	11%
Yes	36	44
Undecided	36	45
If yes, automated reject processing is:		
On-line	58%	63%
Off-line	42	37
Do you repair all fields, including the account number?		
No	13%	16%
Yes	15	12
Yes, on selected banks	44	40
Yes, but only if operator intervention is not required	28	32

The percentage of banks that now plan, or have probably considered, the use of automated reject processing systems has increased. Federal Reserve pricing of rejects, as well as the need for productivity improvements, seem to have been instrumental in this evolution.

The trend also continues for banks with automated reject processing equipment to process a greater percentage of items by these means rather than by manual methods. Table 56 shows that in 1981 the average number of items processed in this manner increased to 70.1% of total rejects, while the median rate jumped to 82.8%. The upper limit apparently has not been reached, since approximately 28% of the banks using this automated equipment report that they do not process any rejects by less productive manual operations (Table 57).

Table 56

Percent of Automated Reject Processing by Area

Area	Automated Reject Processing†				Manual Reject Processing‡			
	1978	1979	1980	1981	1978	1979	1980	1981
Boston	70.8	82.8	74.1	69.9	29.2	17.2	25.9	30.1
New York	51.5	60.9	43.0	58.8	48.5	39.1	57.0	41.2
Philadelphia	53.0	64.5	53.9	64.5	47.0	35.5	46.1	35.5
Pittsburgh	97.0	91.7	69.4	100.0	3.0	8.3	30.6	0.0
Washington, D.C.	44.6	82.9	44.3	56.1	55.4	17.1	55.7	43.9
Atlanta	80.7	63.0	61.2	78.4	19.3	37.0	38.8	21.6
Chicago	53.4	59.1	39.5	61.6	46.6	40.9	60.5	38.4
Cleveland	72.9	38.7	67.1	71.3	27.1	61.3	32.9	28.7
Detroit	*	90.1	60.0	50.0	*	9.9	40.0	50.0
Minneapolis/St. Paul	*	*	*	58.8	*	*	*	41.2
St. Louis	48.7	69.9	62.4	56.9	51.3	30.1	37.6	43.1
Dallas	76.7	88.2	96.4	53.1	23.3	11.8	3.6	46.9
Houston	84.5	23.6	63.9	81.3	15.5	76.4	36.1	18.7
Los Angeles	51.9	84.9	82.6	84.8	48.1	15.1	17.4	15.2
San Francisco	76.0	69.0	59.7	67.6	24.0	31.0	40.3	32.4
Denver	*	53.9	47.8	51.4	*	46.1	52.2	48.6
Total banks	70	65	115	104	70	65	115	104
Average	66.0	66.3	68.6	70.1	33.9	33.7	31.4	29.9
Median	75.0	73.8	73.8	82.8	24.0	26.2	26.2	17.2

*No respondents.

† $\frac{Q95}{Q97} \times 100$ ‡ $\frac{Q96}{Q97} \times 100$

Table 57

Distribution of the Automated Reject Processing Rate

Rate	Number of Banks			
	1978	1979	1980	1981
0%—10%	6	6	25	22
10%—20%	1	3	3	0
20%—30%	9	0	6	4
30%—40%	3	3	4	0
40%—50%	3	3	2	7
50%—60%	4	7	6	3
60%—70%	4	5	8	5
70%—80%	11	11	10	9
80%—90%	10	11	10	11
90%—100%	5	6	13	14
100%	14	10	28	29
Total banks	70	65	115	104
Average	66.0	66.3	68.6	70.1
Median	75.0	73.8	73.8	82.8

$$\frac{Q95}{Q97} \times 100$$

Miscellaneous Statistics

Table 58 presents data on the percentage of total incoming items that banks receive with the dollar amount encoding completed. As previous productivity tables indicate, the encoding function is labor intensive and its operation consumes a significant portion of the man-hours devoted to check processing. Federal Reserve pricing has caused the unbundling of prices for non-credit services so that an expansion of price incentives for encoded work is expected, even though the average percentage of encoded items received remained nearly stable at 56.5% in 1981.

The percentage of on-us items as compared with the total number of items processed remained at a consistent 44.6% in 1981; the figure has varied between 44.4%–44.8% since 1978. The percentage of payable-through drafts compared with the total number of on-us items processed was 4.0% in 1981; this figure has varied between 3.8%–5.2% since 1978.

Table 59 shows the percentage of supervisory and clerical man-hours. The combined average for 10 productivity elements was 11.0% in 1981, a slight change from the 11.7% rate reported in 1980.

Table 58
Percent of Incoming Items Encoded

Area	ADL Banks 1978	1979	1980	1981	All Banks 1978	1979	1980	1981
Boston	67.2%	73.5%	66.1%	68.9%	64.1%	48.1%	52.1%	55.8%
New York	49.0	55.8	53.5	56.7	48.9	48.2	51.8	45.2
Philadelphia	69.6	50.8	72.1	70.5	56.0	56.9	44.6	48.5
Pittsburgh	60.0	52.5	53.6	53.2	55.0	48.7	39.6	50.2
Washington, D.C.	48.6	43.5	30.3	39.4	50.6	43.9	43.8	47.5
Atlanta	66.4	67.8	56.5	73.6	58.2	54.5	51.1	55.8
Chicago	80.2	83.9	78.7	84.0	77.2	70.2	69.4	73.2
Cleveland	58.2	62.9	62.2	62.9	51.7	52.9	55.8	50.7
Detroit	57.6	60.0	57.1	56.7	51.3	40.1	43.4	38.0
Minneapolis/St. Paul	*	*	*	90.5	*	*	*	54.9
St. Louis	68.6	68.4	73.1	67.5	66.7	66.5	69.7	69.6
Dallas	80.0	82.4	83.8	88.1	76.3	71.1	76.8	71.0
Houston	85.5	86.8	88.7	87.4	65.9	62.3	69.2	59.7
Los Angeles	50.1	43.6	45.4	*	42.3	33.8	36.0	31.9
San Francisco	36.9	38.7	42.3	38.7	38.5	40.2	46.8	44.3
Denver	77.8	77.9	85.4	82.8	68.4	67.3	66.9	58.3
Total banks	43	30	36	33	154	152	170	157
Average	57.4	56.8	64.4	60.7	53.9	50.7	57.0	56.5

*No respondents.

$$\frac{Q1 + Q2}{Q9} \times 100$$

Table 59
Percent of Supervisory to Clerical Man-Hours

Task	Average Supervisory Time 1978	1979	1980	1981
Processing of exception items (Q47 ÷ Q46) × 100	13.0%	12.4%	14.0%	14.4%
Data control (Q49 ÷ Q48) × 100	12.9%	16.7%	12.8%	12.2%
Encoding (Q51 + Q55) ÷ (Q50 + Q54) × 100	11.8%	6.3%	12.1%	8.9%
Check receiving (Q53 ÷ Q52) × 100	*	*	11.6%	12.6%
Reader/sorter (Q57 ÷ Q56) × 100	20.1%	16.8%	15.2%	18.9%
Cash letter make-up (Q59 ÷ Q58) × 100	14.1%	13.0%	13.6%	13.9%
Microfilm (Q61 ÷ Q60) × 100	8.1%	10.0%	5.5%	10.8%
Paying and filing (Q63 ÷ Q62) × 100	9.8%	4.9%	8.2%	8.4%
Bulk filing (Q65 ÷ Q64) × 100	*	*	10.8%	13.4%
Return items (Q67 ÷ Q66) × 100	12.8%	23.5%	12.8%	11.6%
Total banks	134	151	158	106
Combined Average	12.1%	9.4%	11.7%	11.0%

*No comparable data collected.

$$\frac{Q47 + Q49 + Q51 + Q53 + Q55 + Q57 + Q59 + Q61 + Q63 + Q65 + Q67}{Q46 + Q48 + Q50 + Q52 + Q54 + Q56 + Q58 + Q60 + Q62 + Q64 + Q66} \times 100$$

Check Truncation

As commercial banks search for more profitable and productive means of providing non-credit services, check truncation activities can be expected to gain wider acceptance. Since the banking industry appears on the threshold of dramatic movement in this direction, this survey began measuring truncation trends. In order to remain consistent with the format outlined in the BAI manual, *Check Truncation*, four types of activities were measured:

- *Truncation at the Bank of First Deposit* —Truncation at the location of the first deposit of an item, such that payment information required by the bank's accounting system is transmitted by terminal entry, and check flow stops at that location.
- *Check Safekeeping at Payor Bank* —Truncation after high-speed processing by the payor bank, such that checks are not returned to that bank's customers, who receive payment information from descriptive statements, and access to their checks through efficient item retrieval and/or image processing functions.
- *Cooperative Check Truncation* —Truncation after high-speed processing by the bank of first deposit, such that payment is forwarded to the payor bank by electronic means, and check flow stops at the bank of first deposit.
- *Electronic Check Presentment* —Check flow is not truncated; however, payment information is transmitted by electronic means to the payor bank, where the checks are delivered at a later time.

Previous check collection surveys did not report items processed for other institutions under a service bureau arrangement. Thus, it is important to note that a significant portion of the volume truncated by some banks is not reported here. That is, to remain consistent with the past, data were not requested on NOW account or sharedraft items that are truncated by a commercial bank as a part of accounting services provided for another institution. The Chase Manhattan Bank, for example, may process more than 700,000 such items per day, with an average dollar value of $65.00.

With respect to the different forms of truncation activities as outlined here, none of the respondents reported pure truncation at the bank of first deposit. In Table 60, the weekly average number of items, and dollars representing those items, are shown for the other categories.

For the banks reporting detailed data concerning check safekeeping at payor bank, the weekly average number of items held for safekeeping by a bank was 72,538.4, and the weekly average dollar volume of those items was $53,715,059.60. Using the average figures because all banks did not report dollar value data, an average check amount for this category was $740.50.

The banks participating in the National Association for Check Safekeeping's pilot project reported a weekly average of 123.5 items truncated, with a weekly average dollar volume of $16,929.50. The November 1981 statistics from NACS indicate that a total of 1,354 items with a dollar volume of $81,000 were truncated during the month. Given that a maximum dollar value per item of $300.00 was in effect at the time, the average check amount of $59.82 achieves the proper perspective.

The weekly average number of items processed by means of electronic check presentment was 17,775.7. With an average weekly dollar volume of $22,721,361.60, the average check amount for this category was $1,278.23.

Table 60

Forms of Check Truncation

	Number of Banks			
Area	Truncation at the Bank of First Deposit 1981	Check Safekeeping at Payor Bank 1981	Cooperative Check Truncation 1981	Electronic Check Presentment 1981
Boston	0	0	0	0
New York	0	5	2	0
Philadelphia	0	5	0	0
Pittsburgh	0	1	0	1
Washington, D.C.	0	2	0	1
Atlanta	0	3	0	1
Chicago	0	3	1	2
Cleveland	0	1	0	0
Detroit	0	0	0	0
Minneapolis/St. Paul	0	3	0	0
St. Louis	0	2	0	0
Dallas	0	1	0	1
Houston	0	0	0	0
Los Angeles	0	2	1	0
San Francisco	0	2	0	1
Denver	0	2	0	0
Total banks	0	32	4	7
Total items	—	2,321,230	494	124,430
Average	—	72,538.4	123.5	17,775.7
Total banks	0	26	2	7
Total dollars	—	$1,396,591,550	$ 33,859	$159,049,531
Average	—	53,715,059.8	16,929.5	22,721,361.6

Transit Return Items

In July 1973, Bank Administration Institute conducted an extensive survey of exception item and cost data for the banking industry. Since transit return items have proven to be particularly costly exception items for bankers, some follow-up research was undertaken.

The 1973 study found that 64.7% of all return items were for amounts less than $100, 20.6% were for amounts between $100 and $1,000, and 14.7% were for amounts greater than $1,000. Although the dollar categories were expanded and only transit return items were measured in the 1981 research, Table 61 shows that 62.7% of the items were for amounts less than $100, 28.6% were for amounts between $100 and $1,000, and 8.7% were for amounts greater than $1,000. When the reasons for return items were examined in 1973, it was found that 71.7% were for nonsufficient funds (NSF), while in 1981, the figure for transit return items was 71.2%. Seventy-six banks were able to extract this detailed information.

Table 62 outlines how the total dollars representing those return items were classified. A comparison of the two tables reveals 81.8% of the return item dollars were associated with only 8.7% of the number of items. On the average, 47.4% of all transit return dollars were from NSF items, while 27.8% of the dollars were from missing endorsement items.

Survey banks were asked to report their average monthly costs of operating their transit returns departments in 1981. Direct operating expenses, including losses, were requested. Of the 22 banks reporting their costs, an average monthly expense of $14,609.50 was calculated. The range was $500 per month for a bank reporting approximately 1,500 transit returns during the week to $50,000 for a bank reporting about 16,500 items during the week. By projecting the reported weekly volume for a month, an average per item cost was $0.36. The 1973 study reported an institutional return item handling cost of $0.29.

Table 61

Reasons for Return Items

Reason	$0–$24.99		$25–$49.99		$50–$99.99		$100–$999.99		$1000 and Over		Average		Total	
	Number of Items	Percent	Number of Items	Percent	Number of Items	Percent	Number of Items	Percent	Number of Items	Percent	Items	Percent	Items	Percent
Nonsufficient funds											7,683	71.2%	583,875	71.2%
Uncollected funds											291	2.7	22,149	2.7
Payment stopped											295	2.7	22,426	2.7
Account closed/ not found											474	4.4	36,053	4.4
Irregular signature											141	1.3	10,734	1.3
Missing endorsement											524	4.9	39,813	4.9
Other											1,381	12.8	104,942	12.8
Average number of items	3,145	29.1	1,960	18.2	1,663	15.4	3,084	28.6	937	8.7	10,789	100.0%		
Total items	238,993	29.1%	148,985	18.2%	126,417	15.4%	234,372	28.6%	71,225	8.7%			819,992	100.0%

Table 62

Dollar Amount for Return Items

Reason	$0–$24.99 Dollar Value	$0–$24.99 Percent	$25–$49.99 Dollar Value	$25–$49.99 Percent	$50–$99.99 Dollar Value	$50–$99.99 Percent	$100–$999.99 Dollar Value	$100–$999.99 Percent	$1000 and Over Dollar Value	$1000 and Over Percent	Average Dollars	Average Percent	Total Dollars	Total Percent
Nonsufficient funds											$3,610,081	47.4%	$274,366,131	47.4%
Uncollected funds											310,147	4.1	23,571,167	4.1
Payment stopped											261,945	3.4	19,907,801	3.4
Account closed/ not found											100,581	1.3	7,644,171	1.3
Irregular signature											175,493	2.3	13,337,471	2.3
Missing endorsement											2,120,187	27.8	161,134,247	27.8
Other											1,039,116	13.6	78,972,808	13.6
Average dollar value	$ 49,600	0.6	$ 72,460	0.9	$ 118,957	1.6	$ 1,146,583	15.1	$ 6,229,950	81.8	$7,617,550	100.0%		
Total dollars	3,769,642	0.6%	5,506,937	0.9%	9,040,729	1.6%	87,140,284	15.1%	473,476,204	81.8%			$578,933,796	100.0%

Appendix A

1981 Survey Questionnaire

1981
Check Collection Performance Measurement Survey and Survey of Electronic Funds Transfer Transactions

Bank Administration Institute

INSTRUCTIONS

- Please report all data for the period beginning Monday, November 16, 1981, and ending Saturday, November 21, 1981. Place the appropriate date in the space provided at the top of each column in Section I.
- The Outstanding Exception Items, Section VIII, and the Comments, Section XIII, should be completed at the end of the survey period.
- Please report data pertaining to your domestic banking operations, including branches, if applicable.
- Since you may be unable to answer all questions, please respond with "N.A." if the question does not apply to your bank's operation, or with a "zero" where appropriate.
- Please read all definitions before completing the survey.
- Mail the completed survey booklet to:

Constance Blecha
Research Assistant
Bank Administration Institute
60 Gould Center
Rolling Meadows, Illinois 60008

- If you have any questions, please call Ned Miltko (312/228-6200), Principal Systems Specialist.

BANK ADMINISTRATION INSTITUTE

Check Collection and EFT Transactions Performance Measurement

Date _____

Bank Name _____

Street Address _____

City _____ State _____ Zip _____

Name _____ Title _____
(of person to be contacted about survey date)

Address _____ Phone _____
(if different from above)

Name _____ Title _____
(of person to whom completed survey is to be returned, if different from above)

Number of DDA accounts in your bank. _____

Number of DDA accounts in other banks for which you are doing the processing. _____

DATA COLLECTION FORM

Please report all actual counts. Do *not* round off.

INCOMING WORK includes the check processing items received from the Federal Reserve, nonlocal banks, local banks and items included in all deposits made in your bank. Do *not* include the DDA items you process for other banks when you provide the accounting service on a fee basis. Do *not* include extra services performed over and above the check processing for lock box deposits, credit cards, preauthorized payments, account reconcilement, or wire transfer.

ITEMS consist of cashed and deposited checks, deposit tickets, control tickets, and other items that are normally processed commingled with checks on proof and/or encoding equipment. For batches use standard estimating techniques to determine item count.

I. INCOMING WORK

QUESTION	Question Relationship	Monday Date_____	Tuesday Date_____	Wednesday Date_____	Thursday Date_____	Friday Date_____	Saturday Date_____	WEEKLY TOTAL
1. Number of amount encoded items received from other banks and customers who do their own encoding sent to the reader/sorter.	—							1.
2. Number of amount encoded items received from other banks and customers who do their own encoding *not* sent to the reader/sorter.	—							2.
3. Number of items your bank encoded on single-pocket machines sent to the reader/sorter.	—							3.
4. Number of items your bank encoded on single-pocket machines *not* sent to the reader/sorter.	—							4.
5. Number of items your bank encoded on multipocket machines sent to the reader/sorter.	—							5.
6. Number of items your bank encoded on multipocket machines *not* sent to the reader/sorter.	—							6.
7. Number of first-pass items processed on the reader/sorter.	1+3+5=7							7.
8. Number of items that were *not* processed by the reader/sorter.	2+4+6=8							8.
9. Number of items received by your bank.	7+8=9							9.

Please report all actual counts. Do not round off.

OUTGOING WORK is the disposition of all items you received and processed today.

TRANSIT ITEMS are the items you processed both high speed and low speed that were "on-others."

TRANSIT HOLDOVERS—items received by your bank prior to a deadline but which were not processed by high-or-low-speed systems in time to be sent for collection at that deadline. These would result in a loss of float to the bank but not to its customer. Do not add today's holdover items to the next day's count.

ON-US ITEMS—those items drawn on your bank; includes all types of checking accounts, cashier checks, deposit tickets, and control tickets.

ON-US ITEMS HELD OVER—items received by your bank that were not processed in time to be posted to your accounts on the day they were received.

BULK FILE ITEMS—those items stored in bundles according to date paid within the statement cycle.

II. OUTGOING WORK

QUESTION	Question Relationship	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	WEEKLY TOTAL
10. Total number of transit items (on others) sent.	—							10.
11. Total number of transit holdover (on other) items.	—							11.
12. Total number of on-us items paid and filed (from previous day's incoming work).	—							12.
13. Total number of on-us items held over.	—							13.
14. Total number of payable-thru drafts processed.	—							14.
15. Total number of items bulk filed.	—							15.
16. Total number of items processed today.	10+11+12+13+14+15=16							16.
17. Total dollar value of items in No. 11.	—	$	$	$	$	$	$	$ 17.

III. TRANSIT RETURNS

TRANSIT RETURN—items returned today for any reason that were originally sent out as transit items from this bank.

NOTE: Please see Section XI for additional information requested on return items.

NOTE: Due to rounding, estimating and so on, the weekly totals for questions 9 and 16 may not balance, but they should approximate each other.

QUESTION	Question Relationship	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	WEEKLY TOTAL
18. Total number of return items today.	—							18.
19. Total dollar value of items in No. 18.	—	$	$	$	$	$	$	$ 19.

ITEMS MICROFILMED—total count of all check processing items filmed today.

Please report all actual counts. Do *not* round off.

IV. ITEMS MICROFILMED

QUESTION	Question Relationship	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	WEEKLY TOTAL
20. Total number of items filmed prior to reader/sorter processing.	—							**20.**
21. Total number of items filmed after reader/sorter processing.	—							**21.**
22. Total number of items filmed during reader/sorter processing.	—							**22.**
23. Total number of items microfilmed today.	20+21+22 =23							**23.**

REJECTS—are items rejected for any reason on the first pass through a MICR reader/sorter.

HIGH-SPEED REJECT REENTRY—is the recapture of items rejected for any reason on the first pass through a MICR reader/sorter by repassing the items.

V. REJECTS

QUESTION	Question Relationship	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	WEEKLY TOTAL
24. Total number because of transit number misread.	—							**24.**
25. Total number because of account number misread.	—							**25.**
26. Total number because of dollar amount misread.	—							**26.**
27. Total number because of serial number misread.	—							**27.**
28. Total number because of trancode misread.	—							**28.**
29. Total number due to other reasons (unknown or multiple reasons).	—							**29.**
30. Total number of first-pass MICR rejects before high-speed reject reentry.	24+25+26 +27+28+29 =30							**30.**
31. Total number of first-pass MICR rejects remaining after high-speed reject reentry.	—							**31.**

EXCEPTION ITEMS—items or notification of items (such as debits, credits or inquiries) that may require reconcilement with other banks.

MISSENDS—items you missent or received from other banks that did not belong to you.

MISCODES (Encoding Errors)—dollar amount miscoded items you sent or received from other banks.

LISTING ERRORS (Incorrectly Charged)—items listed for an amount different from the written amount that you sent or received from other banks.

FREE—items received but not listed on incoming cash letters. (Enclosed not listed.)

LOST—items listed on the incoming cash letter but not received. (Listed not enclosed.)

Please report all actual counts. Do *not* round off.

VI. EXCEPTION ITEMS

QUESTION	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		WEEKLY TOTAL	
	Discovered	Resolved	Discovered	Resolved	Discovered	Resolved	Discovered	Resolved	Discovered	Resolved	Discovered	Resolved	Discovered	Resolved
32./33 Missends													**32.**	**33.**
34./35 Miscodes (Encoding Errors)													**34.**	**35.**
36./37 Listing Errors (Incorrectly Charged)													**36.**	**37.**
38./39 Free													**38.**	**39.**
40./41 Lost													**40.**	**41.**
42./43 Total exception items today 32+34+36+38+40=42 33+35+37+39+41=43	**42.**	**43.**	**42.**	**43.**	**42.**	**43**	**42.**	**43.**	**42.**	**43.**	**42.**	**43.**	**42.**	**43.**
44. Total dollar value of items in No. 42	$		$		$		$		$		$		$ **44.**	
45. Total dollar value of items in No. 43.	$		$		$		$		$		$		$ **45.**	

LABOR MAN-HOURS—number of clerical and supervisory man-hours worked to complete each labor category listed. Separate estimated production from supervisory man-hours when appropriate for working supervisor. Include general force man-hours used in appropriate labor categories listed.

MAN-HOURS—productive time spent by department employees in completing the following tasks:

EXCEPTION ITEM MAN-HOURS—number of man-hours spent in discovering/resolving exception items for the calendar day.

PREPARATION MAN-HOURS—number of man-hours spent in receiving, batching, performing quality control, and preproving incoming deposits.

ENCODING OPERATOR MAN-HOURS—number of man-hours spent encoding the items received by your bank that were not encoded.

READER/SORTER OPERATOR MAN-HOURS—number of man-hours spent processing first pass items on the reader/sorter.

MICROFILM OPERATOR MAN-HOURS—number of man-hours spent microfilming the check processing items.

DATA CONTROL MAN-HOURS—consists of making MICR corrections or substitutions, preparing other entries for high-speed processing, controlling the movement of batches of items into and out of high-speed processing areas, balancing the transit and DDA entry runs, and preparing of daily settlement figures for departments involved in processing checks.

RETURN MAN-HOURS—number of man-hours spent in processing items returned to your bank that you had originally sent out as on-others items.

PAYING AND FILING MAN-HOURS—consists of processing "on-us" items, including the capture of MICR data preparing daily transaction files, updating customer master files, sorting paper documents, statement printing, management reports, verification of signature, date holds, stop payments, check filing, and statement rendering.

BULK FILING PRODUCTIVITY—number of man-hours spent in the capture of "on-us" MICR data, preparing daily transaction files, updating customer master files, cycle sorting daily on-us items for storage, retrieving and fine sorting cycle-to-date paper items, verifying stop payments, date holds and suspects, statement printing, and statement rendering.

CASH LETTER MAKE-UP MAN-HOURS—consists of processing outgoing ("on-others") items on computer and/or reader/ sorter equipment, including the printing of cash letters, the fine sorting of items by destination, and the assembly and dispatch of these items, including any manual processing of quick kills and reader/sorter rejects.

VII. LABOR MAN-HOURS

QUESTION	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		WEEKLY TOTAL	
	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory
46./47. Total number of nonofficer man-hours to process the exception items in Nos. 42 and 43.													**46.**	**47.**
48./49 Total data control man-hours to process the items in No. 9.													**48.**	**49.**
50./51 Total single-pocket encoding operator man-hours to process the items in Nos. 3 and 4.													**50.**	**51.**
52./53 Total preparation man-hours to process the items in No. 9.													**52.**	**53.**
54./55 Total multipocket encoding operator man-hours to process the items in Nos. 5 and 6.													**54.**	**55.**
56./57 Total reader/sorter man-hours to process the items in No. 7.													**56.**	**57.**
58./59 Total operator man-hours for cash letter makeup in Nos. 10 and 11.													**58.**	**59.**
60./61 Total microfilm operator man-hours to process the items in Nos. 20 and 21.													**60.**	**61.**

VII. LABOR MAN-HOURS (continued)

QUESTION	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		WEEKLY TOTAL	
	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory
62./63. Total paying and filing man-hours to process the items in Nos. 12, 13, and 14.													**62.**	**63.**
64./65 Total bulk filing man-hours to process the items in No. 15.													**64.**	**65.**
66./67 Total man-hours to process return items in No. 18.													**66.**	**67.**
68. All other nonofficer man-hours used in check processing not reported in Nos. 46 to 67.	Hours: _____ Description: _____ Hours: _____ Description: _____ Hours: _____ Description: _____ **68.** Total _____		Hours: _____ Description: _____ Hours: _____ Description: _____ Hours: _____ Description: _____ **68.** Total _____		Hours: _____ Description: _____ Hours: _____ Description: _____ Hours: _____ Description: _____ **68.** Total _____		Hours: _____ Description: _____ Hours: _____ Description: _____ Hours: _____ Description: _____ **68.** Total _____		Hours: _____ Description: _____ Hours: _____ Description: _____ Hours: _____ Description: _____ **68.** Total _____		Hours: _____ Description: _____ Hours: _____ Description: _____ Hours: _____ Description: _____ **68.** Total _____		**68.** _____	
									69. Total of questions 46 to 68.				Grand **69.** Total _____	

PLEASE COMPLETE THE FOLLOWING AT THE END OF THE WEEK

VIII. OUTSTANDING EXCEPTION ITEMS

Note: In order to obtain an accurate description of total exception dollars, please report the summation of dollar value for all debit and credit items outstanding. If this is not possible, complete this section with "NA".

Total of Debit and Credit Outstanding Transit Exception Items	Part of Total Exception Items (Debit and Credit) That Have Been Outstanding for:				
	1 Month or Less	1-2 Months	2-4 Months	4-6 Months	Over 6 Months
70. $ _____ Amount	71. $ _____ Amount	72. $ _____ Amount	73. $ _____ Amount	74. $ _____ Amount	75. $ _____ Amount
76. _____ Items	77. _____ Items	78. _____ Items	79. _____ Items	80. _____ Items	81. _____ Items

Note: 70=71+72+73+74+75
76=77+78+79+80+81

82. Generally, our bank would: (circle one)

Always balance before items leave the bank, even if it means missing a transit deadline. **1**

Attempt to balance before the items leave the bank, but will make a transit deadline even if balancing is incomplete. **2**

Very seldom balance before the items leave the bank to make a transit deadline. **3**

83. Our bank's experience over the last year indicates that exception items have: (circle one)

		Why
Grown	1	_____
Remained about the same	2	_____
Decreased	3	_____

84. The staff responsible for making adjustments and reconciliations over the last year has:

*Number of People**		1980	1981
Grown	1	85.	86.
Remained about the same	2		
Decreased	3		

**Number of full-time equivalent people.*
Express part-time people as fractional of full-time people.

NOTE: The productivity figures reported in this section should have been reported in the appropriate categories of earlier sections of the survey. This section should be completed if your bank utilizes on-line reject reentry techniques.

ON-LINE REJECT REENTRY—processing of items rejected from all first pass and subsequent passes of the MICR reader/sorter, using CRT or other automated devices to merge reject data directly to the MICR capture system.

ON-LINE REJECT REENTRY MAN-HOURS—making MICR corrections/substitutions through CRT or other automated device, controlling the movement of batches of items into and out of the high-speed processing job stream, balancing the transit and DDA reports, both first and subsequent passes, and providing daily settlement figures for all appropriate departments.

IX. ON-LINE REJECT REENTRY

QUESTION	Question Relationship	Weekly Total
87. Total number of reject items reentered on-line from first passes.	—	**87.**
88. Total number of reject items reentered on-line from subsequent passes.	—	**88.**
89. Total number of reject items reentered.	87+88=89	**89.**
90. Total man-hours to reenter reject items in No. 89.	—	**90.**

X. AUTOMATED REJECT PROCESSING

NOTE: The productivity figures reported in this section should have been reported in the appropriate categories of earlier sections of the survey. This section should be completed if your bank utilizes a system of automated processing of reject items.

AUTOMATED REJECT PROCESSING—processing of all nonmachinable items, including items rejected by the MICR reader/sorter, on *both first pass and subsequent passes*, using automated equipment for repair and data capture.

AUTOMATED REJECT PROCESSING MAN-HOURS—preparing reject items for processing (including attaching strips), processing the rejects, and balancing output.

91. Is your bank using automated reject processing? (circle one)

1. No 2. Yes, exclusively 3. Yes, in combination with manual methods

92. If not, does your bank plan to acquire automated reject processing capability? (circle one)

1. No 2. Yes 3. Undecided

93. If your bank uses automated reject processing, is it accomplished? (circle one)

1. On-line? 2. Off-line?

94. If your bank uses automated reject processing, do you repair all fields, including account number? (circle one)

1. No 2. Yes 3. Yes, on selected banks 4. Yes, but only if operator intervention is not required.

QUESTION	Question Relationship	Weekly Total
95. Total number of all rejects processed through automated reject systems.	—	**95.**
96. Total number of all rejects processed through manual reject systems.	—	**96.**
97. Total number of MICR rejects processed.	95+96=97	**97.**
98. Total man-hours used to process reject items in No. 97.	—	**98.**

NOTE: Information in this section is requested to update past BAI research about the reasons for transit return items. We know gathering this data is not easy, but with your help, industry studies can be improved.

The following tables, one for each day of the week, should be completed according to the following format: if 3 checks written for $10.00 each are received on Monday November 16, due to missing endorsements, the table for Monday should be completed under the $0-24.99 dollar column on the line entitled "Missing endorsements." A "3" would be listed in the left hand column and $30.00 ($10.00 X 3) in the right hand column. If your bank has received an item for reasons other than the ones listed, please specify in the appropriate space and complete the table accordingly.

Monday Date_____

XI. TRANSIT RETURN ITEMS

QUESTION	Number of Items	Total Dollars $0-24.99	Number of Items	Total Dollars $25-49.99	Number of Items	Total Dollars $50-99.99	Number of Items	Total Dollars $100-999.99	Number of Items	Total Dollars $1,000+	Sub-Totals Items	Sub-Totals Dollars
99./100 Non-sufficient funds		$		$		$		$		$	**99.**	$ **100.**
101./102. Uncollected funds		$		$		$		$		$	**101.**	$ **102.**
103./104. Payment stopped		$		$		$		$		$	**103.**	$ **104.**
105./106. Account closed/ Not found		$		$		$		$		$	**105.**	$ **106.**
107./108. Irregular signature		$		$		$		$		$	**107.**	$ **108.**
109./110. Missing endorsement		$		$		$		$		$	**109.**	$ **110.**
111./112. Other _____ _____		$		$		$		$		$	**111.**	$ **112.**
Column Sub-Totals	**113.**	$ **114.**	**115.**	$ **116.**	**117.**	$ **118.**	**119.**	$ **120.**	**121.**	$ **122.**	**123.**	$ **124.**

Tuesday Date_____

XI. TRANSIT RETURN ITEMS

QUESTION	Number of Items	Total Dollars	Number of Items	Total Dollars	Number of Items	Total Dollars	Number of Items	Total Dollars	Number of Items	Total Dollars	Sub-Totals Items	Sub-Totals Dollars
		$0-24.99		$25-49.99		$50-99.99		$100-999.99		$1,000+		
125./126. Non-sufficient funds		$		$		$		$		$	**125.**	$ **126.**
127./128. Uncollected funds		$		$		$		$		$	**127.**	$ **128.**
129./130. Payment stopped		$		$		$		$		$	**129.**	$ **130.**
131./132. Account closed/ Not found		$		$		$		$		$	**131.**	$ **132.**
133./134. Irregular signature		$		$		$		$		$	**133.**	$ **134.**
135./136. Missing endorsement		$		$		$		$		$	**135.**	$ **136.**
137./138. Other _____ _____		$		$		$		$		$	**137.**	$ **138.**
Column Sub-Totals	**139.**	$ **140.**	**141.**	$ **142.**	**143.**	$ **144.**	**145.**	$ **146.**	**147.**	$ **148.**	**149.**	$ **150.**

Wednesday Date_____

XI. TRANSIT RETURN ITEMS

QUESTION	Number of Items	Total Dollars $0-24.99	Number of Items	Total Dollars $25-49.99	Number of Items	Total Dollars $50-99.99	Number of Items	Total Dollars $100-999.99	Number of Items	Total Dollars $1,000+	Sub-Totals Items	Sub-Totals Dollars
151./152. Non-sufficient funds		$		$		$		$		$	151.	$ 152.
153./154. Uncollected funds		$		$		$		$		$	153.	$ 154.
155./156. Payment stopped		$		$		$		$		$	155.	$ 156.
157./158. Account closed/ Not found		$		$		$		$		$	157.	$ 158.
159./160. Irregular signature		$		$		$		$		$	159.	$ 160.
161./162. Missing endorsement		$		$		$		$		$	161.	$ 162.
163./164. Other _____ _____		$		$		$		$		$	163.	$ 164.
Column Sub-Totals	165.	$ 166.	167.	$ 168.	169.	$ 170.	171.	$ 172.	173.	$ 174.	175.	$ 176.

Thursday Date _____

TRANSIT RETURN ITEMS

QUESTION	Number of Items	Total Dollars $0-24.99	Number of Items	Total Dollars $25-49.99	Number of Items	Total Dollars $50-99.99	Number of Items	Total Dollars $100-999.99	Number of Items	Total Dollars $1,000+	Sub-Totals Items	Sub-Totals Dollars
177./178. Non-sufficient funds		$		$		$		$		$	177.	$ 178.
179./180. Uncollected funds		$		$		$		$		$	179.	$ 180.
181./182. Payment stopped		$		$		$		$		$	181.	$ 182.
183./184. Account closed/ Not found		$		$		$		$		$	183.	$ 184.
185./186. Irregular signature		$		$		$		$		$	185.	$ 186.
187./188. Missing endorsement		$		$		$		$		$	187.	$ 188.
189./190. Other _____ _____		$		$		$		$		$	189.	$ 190.
Column Sub-Totals	191.	$ 192.	193.	$ 194.	195.	$ 196.	197.	$ 198.	199.	$ 200.	201.	$ 202.

Friday Date_____

XI. TRANSIT RETURN ITEMS

Sub-Totals

QUESTION	Number of Items	Total Dollars	Number of Items	Total Dollars	Number of Items	Total Dollars	Number of Items	Total Dollars	Number of Items	Total Dollars	Items	Dollars
		$0-24.99		$25-49.99		$50-99.99		$100-999.99		$1,000+		
203./204. Non-sufficient funds		$		$		$		$		$	**203.**	$ **204.**
205./206. Uncollected funds		$		$		$		$		$	**205.**	$ **206.**
207./208. Payment stopped		$		$		$		$		$	**207.**	$ **208.**
209./210. Account closed/ Not found		$		$		$		$		$	**209.**	$ **210.**
211./212. Irregular signature		$		$		$		$		$	**211.**	$ **212.**
213./214. Missing endorsement		$		$		$		$		$	**213.**	$ **214.**
215./216. Other _____ _____		$		$		$		$		$	**215.**	$ **216.**
Column Sub-Totals	**217.**	$ **218.**	**219.**	$ **220.**	**221.**	$ **222.**	**223.**	$ **224.**	**225.**	$ **226.**	**227.**	$ **228.**

Saturday Date_____

XI. TRANSIT RETURN ITEMS

QUESTION	Number of Items	Total Dollars $0-24.99	Number of Items	Total Dollars $25-49.99	Number of Items	Total Dollars $50-99.99	Number of Items	Total Dollars $100-999.99	Number of Items	Total Dollars $1,000+	Sub-Totals Items	Sub-Totals Dollars
229./230. Non-sufficient funds		$		$		$		$		$	229.	$ 230.
231./232. Uncollected funds		$		$		$		$		$	231.	$ 232.
233./234. Payment stopped		$		$		$		$		$	233.	$ 234.
235./236. Account closed/ Not found		$		$		$		$		$	235.	$ 236.
237./238. Irregular signature		$		$		$		$		$	237.	$ 238.
239./240. Missing endorsement		$		$		$		$		$	239.	$ 240.
241./242. Other_____ _____		$		$		$		$		$	241.	$ 242.
Column Sub-Totals	243.	$ 244.	245.	$ 246.	247.	$ 248.	249.	$ 250.	251.	$ 252.	253.	$ 254.

NOTE: In the space below, please fill in the *average monthly* cost of operating your Transit Returns Department in 1981. Since direct operating expense is being measured, please include the cost of salaries, overtime, telephone, postage, office supplies, and operational losses. *Do not* include fringe benefits, capital expenditures, space rental, or indirect expenses.

255. Average 1981 Monthly Expense $_____

NOTE: The information gathered in this survey will *conform* to the format established in BAI's manual, *Check Truncation*. Thus, four forms of check truncation will be measured: truncation at the bank of first deposit, safekeeping at the payor bank, cooperative truncation, and electronic check presentment. Reported volumes should be consistent with the definition of "item" given in Section I.

TRUNCATION AT THE BANK OF FIRST DEPOSIT—check flow is truncated at the location of first deposit, since payment information is transmitted by terminal entry to the bank's accounting system.

CHECK SAFEKEEPING AT PAYOR BANK—check flow is truncated after high-speed processing by the payor bank. Checks are not returned to customers, although check payment information is contained in a descriptive statement. Efficient item retrieval and image processing functions allow customer access to these items.

COOPERATIVE CHECK TRUNCATION—check flow is truncated after high-speed processing by the bank of first deposit. Payment information is forwarded to the payor bank by alternative means; for example, through the ACH. (Participants in the ABA Safekeeping Pilot Project would report activity under this category.)

ELECTRONIC CHECK PRESENTMENT—check flow is not truncated, however, payment information is transmitted by electronic means to the payor bank, where checks are delivered later.

XII. CHECK TRUNCATION

QUESTION	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	WEEKLY TOTAL
256. Total number of on-us items truncated at the location of first deposit							**256.**
257. Total number on on-us items kept for safekeeping at payor bank.							**257.**
258. Total number of transit items (on others) truncated in cooperative program.							**258.**
259. Total number of transit items (on others) transmitted for electronic check presentment.							**259.**
260. Total dollar value of items in No. 256.							**260.**
261. Total dollar value of items in No. 257.							**261.**
262. Total dollar value of items in No. 258.							**262.**
263. Total dollar value of items in No. 259.							**263.**

XIII. COMMENTS

NOTE: The results of past BAI Check Collection Surveys have contained appendices devoted to commentary from the nation's check processing professionals. Please provide your thoughts so we can continue this valuable forum. How have conditions changed from last year? Attach a separate sheet if you need more space.

Personnel (Training and Turnover) _____

_____

_____

_____

Transportation _____

_____

_____

_____

Rejects (Rates and Handling) _____

_____

_____

_____

Outstanding Exception Items _____

_____

_____

_____

Returns and Adjustments _____

_____

_____

_____

Automated Reject Processing

Equipment and Systems Problems

Security

Federal Reserve Pricing Impacts

Check Truncation (Safekeeping and Non-Return)

Miscellaneous

1981 Survey of Electronic Funds Transfer Transactions

Please report all actual counts. *Do not round off.*

ACH TRANSACTIONS—any electronic funds transfer transactions processed through a local or regional automated clearinghouse, including any items you have processed for your own customers.

RETURNED ACH TRANSACTIONS:

Sent—any ACH transaction that you returned to the originator because you were unable to post to an account or for which no prenotification was on file.

Received—any ACH transaction that you originated, but which was returned to you by the ACH or the intended receiver.

ACH DEBIT TRANSACTIONS:

Insurance Premium, Home Mortgage—any ACH transaction sent or received by you for the payment of a consumer obligation.

Telephone Bill Payment—any ACH transaction sent or received by you as a result of a telephone bill payment program at a financial institution.

Corporate Payment—any ACH transaction sent or received by you that was originated by a corporation for the account of a corporation.

I. ACH TRANSACTIONS

QUESTION	Question Relationship	MONDAY		TUESDAY		WEDNESDAY		THURSDAY		FRIDAY		SAT.—SUN.		WEEKLY TOTAL	
		Sent	Received	Sent	Received	Sent	Received	Sent	Received	Sent	Received	Sent	Received	Sent	Received
1./2. Debits	—													1.	2.
3./4. Credits	—													3.	4.
5./6. Total ACH transactions	1+3=5 2+4=6													5.	6.

II. RETURNED ACH TRANSACTIONS

QUESTION	Question Relationship	MONDAY		TUESDAY		WEDNESDAY		THURSDAY		FRIDAY		SAT.—SUN.		WEEKLY TOTAL	
		Sent	Received	Sent	Received	Sent	Received	Sent	Received	Sent	Received	Sent	Received	Sent	Received
7./8. Debits returned	—													7.	8.
9./10. Credits returned	—													9.	10.
11./12. Total returned transactions	7+9=11 8+10=12													11.	12.

III. ACH DEBIT TRANSACTIONS

QUESTION	Question Relationship	MONDAY		TUESDAY		WEDNESDAY		THURSDAY		FRIDAY		SAT.—SUN.		WEEKLY TOTAL	
		Sent	Received	Sent	Received	Sent	Received	Sent	Received	Sent	Received	Sent	Received	Sent	Received
13./14. Insurance premium	—													13.	14.
15./16 Home mortgage	—													15.	16.
17./18. Telephone bill payment	—													17.	18.
19./20. Corporate payment—replacement for depository transfer	—													19.	20.
21.22. Other payments	—													21.	22.
23./24. Total ACH debit transactions	13+15+17+19+21=23 14+16+18+20+22=24													23.	24.

Please report all actual counts. Do *not* round off.

ATM TRANSACTIONS—any transactions initiated at an automated letter machine by the customer.

IV. ATM TRANSACTIONS

QUESTION	Question Relationship	Monday	Tuesday	Wednesday	Thursday	Friday	Sat./Sun.	WEEKLY TOTAL
25. Total number of cash withdrawals from checking.								25.
26. Total number of cash withdrawals from savings.								26.
27. Total number of cash withdrawals from credit card.								27.
28. Total number of balance inquiries.								28.
29. Total number of transfers between checking, savings, and credit card accounts.								29.
30. Total number of checking deposits received								30.
31. Total number of savings deposits received.								31.
32. Total number of bill payments.								32.
33. Total number of other ATM transactions.								33.
34. Total ATM transactions.	25+26+27+28+29+30+31+32+33=34							34.
35. Total dollar value of items in No. 25.		$	$	$	$	$	$	35. $
36. Total dollar value of items in No. 26.		$	$	$	$	$	$	36. $
37. Total dollar value of items in No. 27.		$	$	$	$	$	$	37. $
38. Total dollar value of items in No. 30.		$	$	$	$	$	$	38. $
39. Total dollar value of items in No. 31.		$	$	$	$	$	$	39. $
40. Total dollar value of items in No. 32.		$	$	$	$	$	$	40. $

Please complete the following questions:

	MAIN OFFICE		BRANCH OFFICES		OFF-PREMISES UNITS		TOTAL ATM UNITS	
	automated teller machines	cash dispensers	automated teller machines	cash dispensers	automated teller machines	cash dispensers	automated teller machines	cash dispensers
How many automated teller machines/cash dispensers do you presently have in service? →	41.	42.	43.	44.	45.	46.	47.	48.
How many automated teller machines/cash dispensers do you plan to install in the next 12 months? →	49.	50.	51.	52.	53.	54.	55.	56.
What was the total volume of ATM transactions for all machines installed at each location during the survey excluding balance inquiries? →	57.	58.	59.	60.	61.	62.	63.	64

NOTE:
47=41+43+45
48=42+44+46
55=49+51+53
56=50+52+54
63=57+59+61+34-28
64=58+60+62+34-28

65. Are your automated teller machines/cash dispensers currently . . . 1. On-line? 2. Off-line? (circle one)

Please describe any significant EFT problems you are experiencing. Consider availability, equipment, personnel, settlement, exception or rejection items, card issuance, theft, fraud or security.

Additional Comments

Appendix B

Banker Comments

The following comments were submitted by bankers who participated in the 1981 BAI Survey. The purpose of this section is to provide bankers with an overview of the current environment in check processing operations. Therefore, references to specific organizations, vendors, or equipment were avoided; however, comments concerning working relationships with Federal Reserve Banks and other financial institutions are pertinent to the overall functioning of the check collection system, and are included to promote the cooperative efforts for improvement by all participants.

Personnel

"Our turnover in proof and check processing operations has decreased due to increased efficiencies achieved through bulk filing and incentive programs."

"We have experienced moderate turnover in our operations area. Our bank has a trainer for our encoding operations."

"We experienced higher turnover last year and the number of new (inexperienced) people has resulted in more overtime and expense for part-time help."

"Turnover continues to be a problem. It is inherent to the hours and the type of work. Salary levels in banking make it difficult to keep reliable help, especially with other alternatives in our market."

"Our turnover rate has been reduced by one-half, as compared to 1980. This was achieved as a result of improved salaries and working conditions for our operations group. The lower turnover contributed to a reduction in outstanding exception items for our adjustments department."

"Our staff has been reduced by 15% due to economic conditions."

"The fact that operations personnel have traditionally been paid a lower salary than in other areas of the bank together with our new job posting policy have contributed to a high degree of turnover last year."

"With emphasis on productivity and quality, we have stepped up our training to emphasize how each area fits into the processing stream so that personnel know what happens before and after their function. Turnover remains high in proof and transit because of evening work."

"Due to higher than average turnover rates and complex operating systems, more emphasis is being placed on training for both supervisors and line employees."

"We are experiencing high turnover in the verification section. Although we recognize the benefits of bulk filing, higher priority projects have delayed its implementation."

"Turnover has dramatically decreased in 1981, no doubt due to economic conditions."

"We developed training films for sorter operations and data preparation functions."

"We have continued to place great emphasis on cross-training to allow for greater flexibility and more job enrichment."

"The effect of the economy on business has created a greater demand on productivity and an emphasis on the cost of labor. This has resulted in a driving force to promote automation, innovation, and efficiency. These requirements prompt turnover at a time when rapid changes call for continuous training to keep pace."

"Training has expanded to develop a broader perspective of the item processing environment and will continue to be accelerated. Concentrated efforts on cross-training plus the presentation of management classes by professional vendors have enhanced our training program."

"Training has improved, because more attention has been paid to this effort. A better foundation exists because of better procedure documentation."

"Our night operation affords housewives the opportunity to supplement incomes with relative ease."

Transportation

"We have initiated the use of a single courier network to improve our on-time performance."

"In our area, there is not enough competition for ground transportation. One dominant courier company has been successful in preventing much competition in our market."

"There are more couriers in the market today. The air traffic controllers' strike delayed shipments and the curtailment of flights has made it difficult to get to certain cities. The creation of an RCPC at the Helena branch has improved our availability by one day."

"Transportation costs have increased due to the addition of another trip to the Fed. We have also been experiencing increasing problems with sealed packages. Some have been improperly addressed by sending banks, while others have been improperly delivered by the Fed."

"We began our own transportation system five years ago because of poor service from outside couriers and the need for more flexible schedules. It operates very efficiently and more economically."

"Increasingly complex accounting systems are being discussed to enable banks to react to an unstable environment."

"Transportation is becoming a major problem in terms of cost. Expense has risen by at least 12% for each of the last three years and will continue to rise, causing us to evaluate the feasibility of a central versus regional processing centers. Outbound transportation is very competitive, providing financial institutions with some leverage."

"Surprisingly, the PATCO strike had little impact on our direct send network."

"Cash letter transportation services have improved and become more competitive in the past year. More couriers seem to be aware of the needs of banks for reliable, timely services. Couriers appear more aggressive and more willing to meet the needs of the banks."

"More transit endpoints have become available to this bank during the year, which has improved the bank's availability of funds."

"Most independent couriers haven't established satisfactory communication networks to keep the banks informed of the status of the delivery of their cash letters."

"As interest rates climbed, increased transportation needs became justified despite escalating costs. When the rates continue to be volatile or turn down in the future, we must re-evaluate transportation justification on a more frequent basis than we have in the past."

Rejects

"Rejects have been reduced due to increased quality control efforts in sorter operations through a printer monitoring program."

"Many banks that repair rejects still do not repair all fields, particularly the account number field, causing those items to reject at our bank."

"We established a formal MICR quality control program to address rejects—their causes and their correction. ABA and ANSI standards are used as the basis for our analyses."

"Most of our rejects are caused by poor MICR encoding by printers who do not specialize in check printing."

"The rate has gone down due to front end quality control; however, the use of counter checks, payable-through drafts, and insurance drafts is an on-going problem. It is hard to correct MICR problems with drafts because corporations do not seem to want to help."

"Fed pricing has caused banks to review their own reject processing as well as to consider pricing rejects resulting from the processing of correspondent cash letters."

"The processing and repair of rejects are major areas for improvement in the check collection system. The use of strips and carrier envelopes that are not fully MICR encoded increases rejects on in-clearings, creates exceptions, and slows the processing operation."

"Rejects have decreased sharply since last year due to the installation of new equipment. Two years ago, our reject rate was 2.5%, now it is 1%."

"More effective communications regarding customer encoding problems has been beneficial."

"Although new equipment has assisted in reducing the average reject rate, some vendors of paper and printing are doing the banking industry a disservice through poor product quality."

"We have experienced fewer rejects in internal processing due to the non-return of deposit slips."

"We have been able to significantly reduce the reject rate to 1.0–1.1% on prime pass items before high-speed reject re-entry. This result is attributed to stronger vendor management, user cooperation, operational performance, and the bankwide recognition of the cost of reject processing."

Outstanding Exception Items

"Outstanding exception items have increased 67% since the implementation of Fed pricing."

"The time it takes to clear an exception item continues to increase. Receipt of more sealed packages, as well as personnel changes at the Fed, have slowed down exception item clearing. Although we submit correspondence on large item adjustments within a week of advice, it often takes months and several tracers to finally clear them. Credits are as much a problem as debits."

"Even though we are located in a Federal Reserve city, an excessive amount of time is required to clear an outstanding exception item with the Fed. The clearing of exception items with local banks is timely and presents no problems."

"Our outstanding items have decreased due to quality control and on-line reject processing. Credit unions and savings and loan associations do not want to provide assistance on exceptions, but they want us to clear their exception items for them. It is still difficult to receive an answer from large correspondent banks regarding items less than $1,000. Federal Reserve cooperation varies by district. Travelers' checks are almost impossible to collect due to backlogs at the drawee institution. It takes more than six months to clear a Treasury check exception."

"In recent months, we have made an earnest effort to clear most exceptions within five business days after the exception has been reported."

"With respect to photocopies that are entered for collection and returned unpaid, the recognition of prior endorsements is a problem."

"Photocopies processed as cash items continue to be a major area of concern. We continue to find a high percentage of these photocopies already paid, with differences held by another processing bank."

"An automated adjustments system to record and report all outstanding exception items has produced great accountability for these entries."

"We are experiencing a problem clearing exceptions with the various Federal Reserve offices due to backlogs and volumes. It appears that there has been a lack of quality by sending banks."

"The Fed hasn't established, nor has it internally communicated, responsibility for processing adjustments resulting from package sort exchanges. Consistency is lacking throughout the system."

"Our bank is considering automating its research area in 1982 to reduce the number of outstanding exception items."

"One of the most common outstanding exceptions is the encoding error. Unfortunately, it is also the type of exception that takes us several months to resolve."

Returns and Adjustments

"An automated return items system is currently being written in-house."

"Adjustments continue to be a very labor intensive job. It appears that individual banks, as well as Federal Reserve offices, have their own set of rules. Standardization is needed."

"Differences with savings and loan associations on NOW accounts take considerably longer than commercial bank differences."

"Financial institutions should develop a faster method of returning items, particularly large items."

"Fed pricing is causing more banks to consider explicitly pricing these services."

"Our local clearinghouse has done extensive work with the Fed to reduce adjustments and exceptions. This effort to determine the causes for adjustments has been very successful."

"There is a lack of cooperation from larger banks in resolving problems without extensive delays."

"We have experienced a marked increase in incomplete and incorrect information on adjusting entries from the Fed. Fed pricing seems to have created a backlog in adjustment processing."

"We are noticing a higher volume of checks being returned for 'uncollected funds,' particularly large dollar items."

"Some Federal Reserve Banks do not furnish us our reference number. These reference numbers are needed to resolve adjustments quickly, to avoid charge-offs, and to lower our float on Fed accounts."

"One problem in our return item department is the difficulty we are having in identifying our depositors for those items that were initially presented in a carrier, but which are returned without the original carrier."

"Our Federal Reserve Bank does not want to adjust our account for missing return items in their charge letters to us, but would rather have us wait for the actual item or photocopy of it."

"Availability of research material was the problem in researching older adjustments. There was a greater volume of photocopy requests than last year."

"Returns are increasing as economic conditions worsen. Banks have little or no regard for the UCC and process returns without efforts to effect payment. The standardized endorsement must be implemented. This is the only major problem area in item processing."

"Improved film quality and retrieval equipment and methodology have contributed to more efficient handling of items."

Automated Reject Processing

"We are currently installing three automated units to alleviate the bottleneck of OLRR and to improve productivity. Formal standards for reject repair must be addressed by the industry."

"We implemented an on-line, automated system this year."

"On-line reject reentry has eliminated late hours on the second shift. While processing time is improved, such considerations as repair, float, and Fed pricing of rejects have caused us to reconsider an automated system."

"We are testing lockbox remittance processors to encode stripped items with some operator intervention."

"Major banks are currently processing prime pass rejects by high-speed reentry, increasing their research time by one-third."

"Fed pricing has demonstrated to us the value of maximizing the use of our automated equipment. We expect to achieve even greater dividends when on-line processing of rejects is implemented as planned."

Equipment and Systems Problems

"We experienced considerable hardware and software problems after our move to a new operations building."

"Lack of field engineer expertise sometimes causes unnecessary delays."

"Close communications with our vendors has tended to eliminate any significant equipment problems."

"Equipment technology has never been better. The systems and programming support has not kept pace."

"Installation and programming implementation of new processing and capture systems, have made a dramatic change in our check processing capabilities."

"Our system has often been overloaded with new jobs and testing, causing slow response time and difficulty in processing work quickly."

"A major problem seems to be the quantity and/or quality of training supplied by vendors, especially of more sophisticated equipment."

"Our new on-line proof machines have caused us many problems with misreads and missends."

Security

"Our security efforts fall into two distinct categories: physical and software. Our access control system and a series of logs are used to monitor access and delivery of checks to and from the department. Software security is provided by a data access control system."

"Our bank has been experiencing a growth in fraud losses by individuals who have a knowledge of bank processing systems and their weaknesses. We have noted a much higher degree of sophistication exhibited in such areas as check alterations, particularly payroll checks and bank money orders."

"We have greatly limited admission to our computer and receiving areas by strengthening our system. Access to all areas is based upon authorized entry."

Federal Reserve Pricing Effects

"We have initiated dollar sorting to compensate for differences in per item charges at correspondents."

"The Fed seems to be using transportation services to compete with commercial banks in our area for the check processing business."

"Relative to Fed pricing, we are experiencing additional problems in research of add-on cash letter return items. Delays are occurring in the receipt of exception items for the Fed, and an increase in the number of photocopy collection items."

"Fed pricing has caused us to find other methods of clearing items. We are sending 60% fewer items to the Fed. We have upgraded our sorting capacity by adding new pocket modules."

"Every effort is being made to reduce the expense of Federal Reserve pricing. In the past year, the formation of clearing houses in cities where we have processing centers has occurred."

"It is too early to understand the complete impacts of Fed pricing. Banks continue to evaluate their positions. There are concerns over the Fed's stated evaluation and possible modification during 1982. Impacts on the corporate sector have not been determined."

"In some instances, our bank has passed additional Fed costs back to the customer."

"We have experienced a dramatic volume increase as a result of Fed pricing."

"To reduce the hard dollar impact of Fed pricing for check clearing services, cost reduction and float reduction plans are being evaluated. Some fine sorts have been implemented, and sort patterns have been changed to take advantage of upstream presorted cash letters. Direct sendings have increased only slightly, but recommendations are for more to follow. We have implemented a group sort for local city items to encourage non-prime time receipt with less internal cost."

"Fed pricing has had a negative impact on the research department. Exceptions will increase by 25% in 1981. The item pass ratio will also be increased."

"We added 30 additional fine sort endpoints to reduce our Fed costs; however, it appears that the Fed was not ready for their own program, since we have had constant availability, credit, and adjustment problems with these fine sort cash letters."

"Fed pricing has increased the number of banks that we deal with directly. In past years, we were involved with only a few banks, but now we are in direct exchange with many more banks and we expect this trend to continue."

"MCA 1980 has changed both the marketing and operational aspects of check processing because refinements in strategy and collections are taking place at a more rapid pace than in recent years."

"While we were effective in reducing the impact of Fed pricing, the need still arose to pass on this additional expense of doing business to our customers. Now the Fed is entering the marketplace, which makes us wonder whether they plan to compete, to serve, or to regulate as originally intended."

"Reconcilement of Fed pricing statements averages five to eight clerical hours per week."

Check Truncation

"We have begun to actively market the availability of safekeeping of on-us items."

"Our bank is marketing the non-return of checks to corporate customers."

"We are now piloting check safekeeping for a small percentage of our customers."

"Our bank, up to now, has had no serious involvement in this area."

"Check truncation is being studied at this time."

"Safekeeping seems to be feasible and appears to be just around the corner. Truncation worries us when we consider adjustment and return item implications."

"Our bank is currently converting to bulk filing. A non-return check product will be offered when we have converted in the second quarter of 1982."

"Check truncation is coming and it will greatly increase in the next five years."

"An expansion of our pilot program for the non-return of checks is planned for 1982."

"Our bank is currently only safekeeping checks for a very small number of accounts, but we are increasing space and improving handling methods. Customer response is negative thus far."

"Truncation has been introduced as a feature for the thrift institutions for whom we perform processing. It has provided us with a learning experience for its future use in our DDA environment."

Miscellaneous

"We are experiencing problems with manufacturers' refunds. With very small dollar amounts, these items seem to be encoded without proper MICR quality control in the design and printing process."

"Our transit check dollar volume is growing at a rate faster than inflation, which tells us that the check clearing system is being misused. Remote disbursement activity has subsided coinciding with the Fed's denouncement of the practice. The game today seems to be the use of depository transfer checks (DTCs). Companies are transferring funds between banks for two reasons in their use of DTCs: it's less expensive than wiring funds, and they can count on gaining benefit from any float due to failure, usually at the Fed's expense. Although the Fed's program of electronic transfer of large dollar items would combat this, it would be best to take these items out of the system."

"The most labor intensive portion of check processing, outside of exception item handling, is proof encoding; yet little has been accomplished in the effort to evolve from MICR to OCR."

"Another difficult problem is the receipt of an empty carrier envelope among returns from the Fed."